Memory-Based Approaches to The Examination of Alibis Provided by Innocent Suspects

Shiri Portnoy, September 2018

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Abstract

The aim of the current thesis was to extend research on alibi provision by exploring how this process may be improved for innocent suspects, to whom the provision of inaccurate and incomplete alibis may be detrimental. Across three experimental studies and one exploratory survey, I examined (i) whether memory-based reporting instructions enhanced innocent mock suspects' memory output when reporting about past actions (Experiment 1) and evidence that may corroborate their alibi (Experiment 2); (ii) whether a presumption of guilt communicated to innocent mock suspects by an interviewer prior to providing their alibi affected their memory output (Experiment 3), and, (iii) the beliefs and knowledge of lay people about factors concerning the processes of alibi generation and provision (Survey). In **Experiment 1**, innocent and guilty mock suspects provided an alibi, reporting about recently-completed tasks. Prior to alibi provision, participants were asked to ensure that their alibi was either accurate or informative, or both; control participants received no accuracy or informativeness instructions. Innocent mock suspects who were instructed to provide an accurate *and* informative alibi provided the largest number of correct details compared with control participants. In contrast, for guilty mock suspects, neither the number of correct details provided nor the accuracy of alibis differed as a result of the pre-alibi instructions. In **Experiment 2**, prior to providing an alibi, innocent mock suspects were asked to report accurately and informatively about past actions during task completion or about past actions *and* corroborating evidence. Control participants were only asked to report about their time while away from the lab. Results indicated that participants who were asked to report accurately and informatively about past actions or about past actions and corroborating evidence provided a larger number of correct details than did control participants. However, the instructions focused on accurate and informative reporting about past actions and corroborating evidence did not result in the largest number of

correct details. In **Experiment 3**, innocent mock suspects provided an alibi to an interviewer who communicated to them that she believed that they were guilty or innocent, or had no belief about their involvement in a crime. Participants perceived the innocent and guilt presumptive approach of the interviewer, but the number of correct details provided in alibis did not differ across interviewer-belief conditions. Finally, in the **survey**, lay people from the United Kingdom, Israel, and Sweden responded to questions concerning the generation and provision of alibis, indicating their beliefs regarding impaired memory processes as possibly underpinning inaccurate alibis by innocent suspects and the issue of interviewers' presumption of guilt. Participants tended to believe that innocent suspects may not provide inaccurate alibis, but that should this happen, memory processes may be the primary reason. Participants also tended to believe that interviewers usually begin to form an opinion regarding the guilt/innocence of suspects prior to or while hearing the suspects' alibi for the first time, and that guilt presumption can affect how interviewers conduct interviews. The findings reported in the present thesis suggest that innocent suspects' memory output may be increased using specific memory-based pre-alibi instructions. Guiding suspect to provide more correct information may result with innocent suspects providing more forensically valuable information that may promote their exoneration. The finding that participants perceived the innocent and guilt presumptive approach of the interviewer suggests that the effect of guilt presumption on innocent suspects' alibis should be examined during longer interviewer-interviewee interactions. Lastly, the findings of the survey demonstrate that lay people hold some mistaken beliefs regarding innocent suspects' ability to provide accurate alibis. Throughout this thesis, I discuss the importance of examining innocent suspects' memory output as a unique group of rememberers and emphasise that such examination should be based on memory theory.

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Declaration

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

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List of Tables

Abbreviations

ANOVA: Analysis of Variance

BF_{01}: Bayes Factor to estimate likelihood of data the under null hypothesis

BF_{10}: Bayes Factor to estimate likelihood of data the under alternative hypothesis

CI: Confidence interval

DNA: Deoxyribonucleic Acid

GBP: Great Britain Pound

ICC: Intra-Class Correlation Coefficient

PEACE: Planning and preparation; Engage and explain; Account; Closure; Evaluation

SD: Standard Deviation

UK: United Kingdom

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Dissemination

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Chapter 1: General Introduction

In July 1984, 22-year-old Jennifer Thompson-Cannino was sexually assaulted by a man who broke into her apartment. Eleven days later, in a physical lineup, Ms. Thompson-Cannino identified Ronald Cotton as the man who attacked her after already picking his picture during a photo identification. Cotton claimed that he could not have attacked Ms. Thompson-Cannino: On the night of the assault, he was with several people including his brother and friends, finishing the night at a club. But unfortunately, Cotton had the dates confused, as his mother reminded him that he was at home at the time in question, sleeping on the couch. Although there were people who could verify that Cotton was at home, he realised that the police would find out that his original statement was mistaken. When explaining this mistake to his attorney, he replied to Cotton that "the inconsistent alibi would only give the D. A. the opportunity to brand [him] as a liar" (Thompson-Cannino, Cotton, & Torneo, 2009, p. 92). Despite believing that the police officers who interviewed him "already decided [he] was guilty" (ibid, p. 84), Cotton was confident in his innocence and refused to sign a plea bargain. On January 1985, he was sentenced to life in prison plus fifty years. However, in 1995, evidence from the case which were submitted for DNA testing showed no match to Cotton but rather to a convict who had already confessed to committing the crime to a fellow inmate. Eventually, in June 1995, after serving over 10 years for a crime he did not commit, Cotton was released from prison and was cleared of all charges. On the whole ordeal, which started from the day police first arrived at his home, Cotton noted: "From that day forward, I would always pay attention to the date and the time, memorizing details of what happened and when. My life might just depend on it" (Thompson-Cannino, Cotton, & Torneo, 2009, p. 75).

When innocent suspects provide a statement in their attempt to convince police interviewers of their innocence of a crime, namely *an alibi*, they must rely on their

memory, particularly when they do not have the opportunity to consult others or use memory aids such as calendars or diaries. Consequently, the fallibility of human memory puts innocent suspects at risk of providing an inaccurate and/or incomplete alibi, which can be detrimental for the innocent suspect. To date, most research on the provision of statements by people who might have been involved in a crime has concerned eyewitnesses and victims (e.g., Fisher, 1995; Fisher & Geiselman, 2010; Gabbert, Hope, & Fisher, 2009). Research that has concerned suspect statements has focused mostly on innocent suspects' (in)ability to provide corroborating evidence (e.g., Nieuwkamp, Horselenberg, & van Koppen, 2017; Olson & Charman 2012; Strange, Dysart, & Loftus, 2014) and alibi believability as a function of different factors, such as corroborating evidence (e.g., Olson & Wells, 2004; Strange et al., 2014) or salaciousness (Nieuwkamp, Horselenberg, & van Koppen, 2016). However, research on alibi provision is lacking, particularly with respect to the factor of interview techniques that may enhance innocent suspects' memory output during alibi provision. A second factor of interest in alibi generation pertains to the presumption of guilt with which interviewers may approach interviews with suspects and may consequently affect the quality of alibis. Mr. Cotton noted that the police officer who interviewed him had already decided that he was guilty, but it is unknown whether and how this presumption of guilt affects innocent suspects' memory output when providing an alibi.

The aim of the present thesis is to address the gap in literature pertaining to alibi generation. To this end, three experimental studies and one survey were conducted. Specifically, the present thesis examined whether memory-based reporting instructions provided to suspects prior to alibi provision increased their memory output for their past actions (**Chapter 2: Experiment 1)**, or, additionally, for evidence that could support their alibi (**Chapter 3: Experiment 2).** Then, the effects of an

interviewer displaying behaviour consistent with presuming guilt on innocent suspects' memory output during alibi provision were examined (**Chapter 4: Experiment 3**). Finally, the beliefs of members of the general public about alibi generation by innocent suspects and the issue of interviewers' presumption of guilt were examined (**Chapter 5: Survey**). With the data obtained from these four studies, the present thesis strives to contribute to the growing body of research on alibi generation. From an applied perspective, by developing theoretically-informed interview techniques, this thesis aspires to maximize innocent suspects' memory output on the one hand and interviewers' time and resources on the other by eliciting as much information as possible during suspect interviews.

In the General Introduction chapter, I first discuss the importance of studying alibi generation by innocent suspects. Then, I describe findings concerning how innocent suspects usually behave during interviews and present a number of factors that may jeopardise their success in providing complete and accurate alibis. Finally, I discuss how such risk factors may be challenged and present an overview of the research I conducted within this thesis in attempts to assist innocent suspects to provide complete and accurate alibis.

What Is an Alibi?

An alibi is a statement that suspects of a crime provide to police interviewers to convince them that they could not have committed the crime for which they are being held suspects. This process has been identified as the *generation domain* of alibis (Burke, Turtle, & Olson, 2007; Olson & Charman, 2012; Olson & Wells, 2004). According to Burke et al. (2007), the generation domain comprises two phases—the story phase and the validation phase. In the story phase, suspects provide the alibi, reporting from memory about their actions and whereabouts during the time of the crime (Burke et al., 2007; Dysart & Strange, 2012; Olson, 2013). In the validation

phase, suspects attempt to corroborate their alibi by offering one of two (or both) types of evidence—physical and person. *Physical evidence* refers to any object that can indicate that the suspect was at a certain place at a certain time during the time frame of the crime (e.g. a security-camera recording or a shopping receipt). *Person evidence* refers to anyone who can support the suspect's alibi, confirming that s/he was at a certain place at a certain time. Such a person may be familiar to the suspect (e.g., parent, friend) or unfamiliar (e.g., a store clerk, a passer-by; Burke et al., 2007).

The generation domain is followed by the *believability domain*, which comprises the evaluation phase and the ultimate evaluation phase (Burke et al., 2007; Olson & Charman, 2012; Olson & Wells, 2004). During the evaluation phase, the credibility of suspects' alibi is evaluated, usually initially by the police. Finally, in the ultimate evaluation phase, the credibility of the alibi is determined in court by different evaluators who are exposed to all the facts of the case to determine whether the suspect has committed the crime or not (Burke et al., 2007). While there is a considerable body of literature examining the believability domain of alibis (e.g., Culhane & Hosch 2012; Olson & Wells, 2004), hardly any research has been conducted on the generation domain of alibis (Olson & Charman, 2012).

Why Is It Important to Study Alibi Generation?

Alibi evaluators (e.g., police officers) tend to overestimate the ability of innocent suspects to provide accurate alibis (Burke et al., 2007; Dysart & Strange, 2012; Olson & Wells, 2012). In the course of a crime investigation, erroneous or incomplete alibis may be perceived as indicative of deception (Burke et al., 2007; Dysart & Strange, 2012; Olson & Charman, 2012). Innocent suspects' inability to provide a convincing alibi may then result in a false conviction (Crozier, Strange, & Loftus, 2017; Wells et al., 1998). Understanding the reporting behaviour of innocent suspects during alibi

provision, as well as the factors that may affect this behaviour and improve it, may contribute to the prevention of miscarriages of justice.

Innocent Suspects' Behaviour During Police Interviews

To discuss the potential ways to affect innocent suspects' alibi generation, it is important first to understand how innocent suspects usually behave during police interviews. Two main types of behaviour of suspects during interviews can be outlined: nonverbal and verbal. *Nonverbal behaviour* relates to the overt behaviour of suspects, such as vocal cues (e.g., pause durations, stutter) and visual behaviour (e.g., head or/and hand movement, blinking) (Sporer & Schwandt, 2007; Vrij, 2008a, 2008b). In contrast, *verbal behaviour* is covert, concerning speech content in terms of its, for example, length, structure of provided statements, and plausibility (DePaulo et al., 2003; Vrij, 2008a). Traditionally, suspects' behaviours during interviews have been studied and discussed in terms of the extent to which these behaviours serve as cues to deception, namely signs that may help interviewers discern a deceptive suspect from a truthful one (DePaulo et al., 2003; Vrij, 2008b; Vrij, Granhag, & Porter, 2010). While the differentiation of truth tellers from liars (and hence, deception detection) is not in the scope of the present thesis, findings pertaining to innocent suspects' behaviour as discussed in the deception detection literature are relevant also to the context of the present thesis.

In 2003, DePaulo and her colleagues (2003; for a review, see Vrij, 2008a) published their comprehensive meta-analysis on results from 120 independent samples, examining 1,338 estimates of 158 cues to deception. DePaulo et al.'s (2003) aim was to determine whether cues differentiating liars from truth tellers do exist based on the examined samples. Regardless of the importance of this meta-analysis to deception detection research, this work provides a curated account of the behaviour of suspects during interviews. Of most relevance to the current thesis are behaviours of

innocent suspects during interviews, and specifically verbal ones. The meta-analysis showed that truth tellers provide a larger number of details in their statements than liars, thus making them appear more forthcoming during interviews. With respect to the nature of the information provided, truth-tellers' statements were found to be relatively more plausible and believable, and their account of sequence of events is more coherent and logically structured. Additionally, it was found that when truth tellers provide information, they do so in a relatively more engaging manner, meaning that they tend more to describe experiences of personal relevance. In this vein, the meta-analysis showed that truth tellers are less likely to distance themselves from the content of the information they provide (e.g., more use of active than passive voice). More generally, DePaulo et al.'s (2003) meta-analysis suggested that truth tellers tend more to cooperate with the interviewer and they appear more helpful. Additionally, they are more likely to spontaneously correct their statement while providing it, and they willingly admit if they lack memory for some information. In the present thesis, when designing the interview techniques intended to be examined during interviews with innocent mock suspects, it was essential to consider how innocent suspects usually behave when interviewed to potentially trigger desired behaviours (e.g., provision of detailed statements and cooperation).

Innocent Suspects' Self-Regulatory Strategies During Police Interviews

The behaviours of suspects during interviews reflect, and are even are a result of, their *self-regulatory strategies* (Granhag & Hartwig, 2008). Essentially, self-regulatory processes concern the manner by which people control and direct their actions (Markus & Wurf, 1987; see also Fiske & Taylor, 1991). Markus and Wurf (1987) noted that self-regulatory processes involve three components: goal setting, cognitive preparation for action, and a cybernetic cycle of behaviour. First, an individual engages in self-regulation to achieve a certain goal. A goal may be specific

and explicit, such as the decision to finish a marathon on a specific date, or more implicit and general, such as one's desire to be perceived as a nice person (Fiske & Taylor, 1991). Next, during the step (which may or may not occur) of cognitive preparation for action, the individual plans and selects a strategy or several strategies for achieving the goal. The cognitive aspect plays a role here in that the planning is based on the knowledge that one already owns regarding what strategies are useful to achieve which certain goals. Finally, during the cybernetic cycle, the individual attempts to execute her/his plans and strategies while monitoring and assessing the quality of the behaviour.

The need for using self-regulatory strategies is likely to rise when a threatening situation is approaching, during which the person's goal would be to restore control (Fiske & Taylor, 1991). Fiske and Taylor (1991) presented methods that people may use to regain such sense of control. For example, with behaviour control, the person actively behaves to influence an occurring situation. Another example is decision control, pertaining to decision making regarding the course of action during an upcoming stressful situation. An upcoming interview may be perceived by innocent suspects as a threating situation in light of the risk of incorrectly being judged as guilty, which may lead them to engage in self-regulatory behaviour (Granhag & Hartwig, 2008). In this case, the method of decision control (Fiske & Taylor, 1991) may be used to reduce the threat of the upcoming interview by planning the types of behaviour and to-be-provided information during the upcoming interview (Granhag & Hartwig, 2008). The need for using self-regulatory strategies may also rise to control the impression that the interviewer forms of the suspect. In accordance with this self-presentational perspective (DePaulo, 1992; DePaulo et al., 2003), innocent suspects—much like guilty ones—are concerned with creating the impression that they are honest and credible (Hartwig, Granhag, Strömwall, & Doering, 2010).

Research has shown that innocent suspects use several self-regulatory strategies during interviews (Hartwig, Granhag, & Strömwall, 2007; Hartwig et al., 2010; Strömwall, Hartwig, & Granhag, 2006). In studies such as those included in this previous research, participants act as either innocent or guilty mock suspects who, after being accused of committing a crime, provide an alibi to convince an interviewer of their innocence. After providing their alibi, participants complete a post-alibi questionnaire in which they describe what (if any) strategies they used during the interview to succeed in the task of convincing the interviewer of their innocence. The categorization and analyses of these strategies has shown that innocent mock suspects are less likely to plan the verbal content of their alibi compared with guilty mock suspects. It has been found that when innocent mock suspects did plan the verbal content of their alibi, the strategies they used were more forthcoming than those of guilty mock suspects. Specifically, innocent mock suspects were occupied with "telling the truth like it happened", cooperating, and providing a detailed statement.

Suspects' self-regulatory strategies reflect their mental state and reasoning (Granhag & Hartwig, 2008). The reasoning underlying the self-regulatory strategies of innocent suspects is their belief that their innocence bears the power to exonerate them (Kassin & Norwick, 2004; Vrij et al., 2010). This trust of innocent suspects in their own innocence may be due to a more general belief in a just world (Lerner, 1980), in which, eventually, people get what they deserve (Kassin & Norwick, 2004; see also Kassin & Gudjonsson, 2004). Also, they may be under the "illusion of transparency", meaning that they overestimate others' ability to read their internal states, such as their feelings and thoughts (Gilovich, Savitsky, & Medvec, 1998). Due to such reasoning, innocent suspects are typically forthcoming and informative during interviews, and waive their right to remain silent to begin with (Kassin & Norwick, 2004). In fact, these types of reasoning were also found to embody innocent mock suspects'

explanations for *not* having a strategy before providing an alibi (Hartwig et al., 2007): innocent mock suspects noted the fact that they were innocent as a rationale for not having the need to plan how to make their statement appear credible to the interviewer. For the memory-based instructions developed in the present thesis to potentially affect innocent suspects' behaviour during alibi provision, it was important to also consider innocent suspects' self-regulatory strategies, given that such strategies lead to their behaviours during interviews.

Factors That May Challenge Innocent Suspects During Alibi Provision

Despite their willingness to be informative, research has demonstrated that providing accurate and complete alibis can be challenging for innocent suspects. Two main factors may hamper innocent suspects' ability to provide accurate and complete alibis. One factor is impaired memory processes; the second factor is interviewers' presumption of guilt, about which less is known with respect to its effects on innocent suspects' alibis compared with the factor of impaired memory processes.

Impaired memory processes. When providing truthful information, suspects rely on their episodic and autobiographical memory (Burke et al., 2007; Olson & Wells, 2012; Strange et al., 2014). However, due to limitations in human memory, the information innocent suspects provide is prone to errors, inconsistencies, and suggestibility (Schacter, 1999; Tourangeau, 2000). These limitations may concern all stages of information processing: encoding, storage, and retrieval and reporting. In the encoding phase, it is likely that event details are only encoded superficially if the person is engaging in a routine task, as opposed to an out-of-the-ordinary activity or one which is of significance to her/him (Burke et al., 2007; Crozier et al., 2017; Tourangeau, 2000). Event details which have been encoded and are stored in memory may nevertheless become less accessible with the passage of time (Pertzov, Manohar, & Husain, 2017; Tourangeau, 2000). Additionally, encoded event details are likely to

be forgotten if not retrieved often (Schacter, 1999). Innocent suspects may be unmotivated to retrieve any critical details until they are interviewed by the police. Consequently, and because they may not be asked for their alibi until days, months, or even years after the time of the alleged crime (Olson & Charman, 2012), they may forget relevant information by the time they are interviewed.

If not forgotten, retrieved memory details may be distorted if the rememberer is exposed to misinformation suggested by others, and this information is then integrated with the original memory (Loftus, Miller, & Burns, 1978; see Frenda, Nichols & Loftus, 2011 for a review). In other cases, by trying to create an account of their actions and whereabouts with respect to the time of the alleged crime, innocent suspects may wrongly combine information from different memory traces into one erroneous report about an event that did not occur, in what is known as a "memory-conjunction error" (Reinitz, Lammers, & Cochran, 1992; see also Devitt, Monk-Fromont, Schacter & Addis, 2016). Alternatively, in their attempt to provide a coherent alibi by accounting for missing information, innocent suspects may rely on existing knowledge and beliefs in the form of scripts and schemas, especially those that pertain to what they usually do at a certain time (Crozier et al., 2017; Leins & Charman, 2016). However, relying on a schema that does not match the real event may result in a mistaken report (Leins & Charman, 2016).

Existing research on alibi generation has shown that, indeed, innocent suspects struggle to provide accurate and complete alibis due to impaired memory processes. For example, Olson and Charman (2012) asked participants to provide four initial alibis: for two time periods on a specific date six to 14 weeks prior to the study session (i.e., distant-past alibis) and for two time periods on a date three days prior to the session (i.e., near-past alibis). Participants were instructed to rely solely on their

memory for what they were doing in those time periods. Then, participants were given 48 hours to locate the corroborating physical and person evidence they had initially mentioned to have to support their initial alibis. Olson and Charman (2012) found that participants generated fewer initial distant-past alibis than near-past alibis. Moreover, 371 (36%) out of the total 1020 initial alibis provided turned out to be mistaken, with 117 out of those mistaken alibis requiring a narrative change (with more distant-past than near-past alibis requiring this change).

Another demonstration of innocent suspects' difficulty to report accurately from memory due to its limitations comes from research by Strange et al., (2014). Participants provided an alibi for a timeframe three weeks prior to the study session and were then given one week to find evidence to corroborate their alibi. When providing their alibi for the same time frame again after a week, it was found that the two alibis were consistent on only 53% of the details. According to Strange et al. (2014), this finding suggested that the initial alibis comprised a significant amount of inaccurate information. Culhane, Hosch, and Kehn (2008) found that even when participants were asked to report what they were doing on a specific time frame only two days prior to the study, 61 (10.9%) out of 543 participants stated that they had no memory for their actions during that specific time (or had no witness that could corroborate their alibi). In sum, the deterioration and distortion of innocent suspects' memory for past events create a fertile ground for them to provide inaccurate, incomplete, and ultimately, unconvincing alibis.

Interviewers' presumption of guilt. In its nature, an interview is a social interaction between the interviewer/s and the interviewee (i.e., the suspect). At times, although a suspect is innocent of the crime, the interviewer may approach suspect interview already believing that this suspect is guilty (Kassin, Goldstein, & Savitsky, 2003). Although a guilt presumption may be erroneous, it may still be held

confidently. For example, when Moston, Stephenson, and Williamson (1992) investigated 1,067 cases of suspects interviewed by UK police detectives, they found that in 73% (780) of cases the interviewers were sure of the suspect's guilt before the interview took place. With respect to the factors that may initiate a guilt presumption, these include insufficient or even lack of evidence, pressure on the interviewer (from the public or within the police) to find the culprit, or the need for appreciation (Mortimer & Shepherd, 1999). Yet, this guilt presumption may also be based on nothing more than a hunch that the interviewer forms during earlier interactions with the suspect (Kassin, 2006).

While an interviewer's presumption of guilt may be formed only due to internal factors (e.g., the need for appreciation or a hunch), some interview techniques encourage interviewers to form this belief and even maintain it. One such technique is the Reid technique used during American police interviews (Inbau, Reid, Buckley, & Jayne, 2001). In this technique, the interviewer first evaluates whether the suspect is lying or telling the truth. Then, if considered lying by the interviewer, the suspect is interviewed across nine steps of the technique (Inbau et al., 2001). While suggesting approaching suspect interviews with assumption of innocence or assuming a neutral position, the Reid guide also suggests interviewers to adopt a guilt-presuming approach. Moreover, the guide explicitly explains to interviewers that they should approach the nine-step interview with a suspect "whose guilt, in the *opinion* of the investigator, seems definite or reasonably certain" (Inbau et al., 2001, p. 68). It is not surprising then that the Reid technique has been described as a guilt-presumptive technique dedicated to eliciting confessions from suspects (Gudjonsson & Pearse, 2011; Kassin, 2005).

In contrast to the confrontational Reid technique used in the American police system, the UK police system uses a more information-gathering approach, namely the PEACE interview model (Central Planning and Training Unit, 1992a, 1992b). The demand for this first national training programme for interviewing witnesses and suspects grew following a number of miscarriages of justice which occurred partly due to biased and unethical interview techniques. Five stages comprise the PEACE model and also stand for its acronym: Planning and preparation; Engage and explain; Account; Closure; Evaluation. The principles underlying the PEACE model are open mindedness and fairness, and the model is more interviewee-led, allowing suspects the opportunity to present their version of events. Importantly, the PEACE model aims to eliminate false confessions, and interviewers are encouraged to avoid guilt assumptions (e.g., Griffiths & Milne, 2006; Shawyer, Milne, & Bull, 2009). The PEACE model has been adopted by several other police organizations, such as those of Norway (i.e., the KREATIV model; Fahsing & Rachlew, 2009) and New Zealand (Bull & Soukara, 2010). Despite the PEACE recommendation to keep an open mind and avoid presumptions of guilt, interviewers nevertheless continue to approach interviews with suspects while holding biased beliefs about their guilt (Shawyer & Milne, 2015).

Can merely believing that suspects are guilty prior to interviewing them affect the interview process? In their effort to answer this question, Kassin and colleagues (2003) led their interviewer-participants to expect that the suspect-participants they were about to interview were either guilty or innocent of a mock theft. As a preparation for the interview, the mock interviewers were asked to choose six questions they would ask the suspects; they had to choose these questions from a list comprising guilt-presumptive and neutral questions. Mock interviewers primed with guilt expectations chose more guilt-presumptive questions compared with those

primed with innocence expectations. Following the interview, 42% of the guilt-presumptive interviewers judged the suspects guilty compared with only 19% of the innocence-presumptive interviewers, irrespective of the suspects' actual veracity. Then, neutral participants listened to parts of the taped interviews while being "blind" to the interviewers' presumptions and the suspects' veracity. These listeners tended to judge more suspects interviewed by guilt-presumptive interviewers as guilty than those interviewed by innocence-presumptive interviewers. Moreover, the former suspects were perceived by these listeners as more defensive compared with the latter suspects.

Hill, Memon, and McGeorge (2008) extended Kassin et al.'s (2003) study by showing that mock suspects (who chose whether to cheat or not on a test) interviewed with guilt-presumptive questions reported feeling more pressure during the interview to confess than did mock suspects interviewed with neutral questions. Hill et al. (2008) additionally found that neutral participants who listened to recordings of the interviewed suspects rated innocent suspects who were asked guilt-presumptive questions as more guilty than guilty suspects who replied to such questions.

The studies of Kassin et al. (2003) and Hill et al. (2008) demonstrate how merely believing that suspects are guilty prior to interviewing them affects the entire interview process, eventually affecting how neutral observers judge the interviewed suspects. What are the theoretical processes underpinning the effects of a presumption of guilt? In the context of suspect interview, when an interviewer approaches an interview when already believing that the suspect is guilty, a *confirmation bias* is especially likely to be evident (Findley & Scott, 2006). Confirmation biases pertain to the unintentionally selective gathering and use of information to increase the validity of the belief held by perceivers (Nickerson, 1998), such as interviewers. Accordingly,

interviewer-participants in Kassin et al. (2003) and Hill et al. (2008) who were led to believe that their interviewee were guilty chose/formulated (respectively) questions that were coloured by this belief. Due to the top-down nature of the perceiver's perception of the target (i.e., the suspect), this perception is also based on qualities of this perceiver, and not only on characteristics of the target (i.e., bottom-up processing; Kassin, Dror, & Kukucka, 2013). A key feature of a confirmation bias is that it is likely to develop without the perceiver's awareness or intention (Nickerson, 1998).

After the perceiver forms a belief about the target and behaves towards the target in accordance with this belief, this may change the target's behaviour such that it conforms with the perceiver's belief, allegedly providing evidence for the perceiver's belief (i.e., *self-fulfilling prophecy* interaction sequence; Merton, 1948; see also Darley & Fazio, 1980; Mortimer & Shepherd, 1999; Nickerson, 1998). In Kassin et al.'s (2003) and Hill et al.'s (2008) studies, participant-suspects who were asked guilt-presumptive questions (vs. innocence-presumptive or neutral questions) were judged by neutral participants as more guilty, defensive, and nervous. With respect to the interviewer, s/he may fail to recognize that her/his guilt presumption initiated this chain of events, and alternatively may mistakenly conclude that the suspect is behaving the way s/he is because s/he is, in fact, guilty (see Darley & Fazio, 1980). While the perceiver's belief is required to affect her/his behaviour towards the target, the target's perception of the perceiver's behaviour is essential to determine the target's behaviour in response to the perceiver's behaviour. The target may, for example, attribute the (biased) behaviour of the perceiver to dispositional characteristics of the perceiver. Alternatively, the target may attribute the perceiver's behaviour to the target's own characteristics (Darley & Fazio, 1980).

To conclude, being motivated to convince police interviewers of their innocence may not be enough for innocent suspects to succeed in this goal, as factors out of their

control may affect their ability to provide a convincing alibi. While memory-related factors have been found to hamper innocent suspects' ability to provide accurate alibis, the effects of interviewers' presumption of guilt on innocent suspects' memory output have been examined for the first time in the current thesis.

Improving the Process of Alibi Provision by Innocent suspects

Existing findings on factors that affect innocent suspects' ability to provide a convincing alibi call for further research on other such factors, as well as on means to counter their effects. Such an examination may enhance innocent suspects' verbal output and help them provide convincing alibis.

Dealing with impaired memory processes. Memory-based interview techniques may assist innocent suspects with providing complete and accurate, and ultimately, convincing alibis. However, studies to date devoted to developing such interview techniques are lacking (see Burke et al., 2007; Crozier et al., 2017; Leins & Charman, 2016). A notable exception is Leins and Charman's (2016) study, in which they demonstrated the effects of recall cuing on alibi accuracy. In the first stage of the study participants completed a number of tasks. Between five and nine days later, participants provided an alibi regarding crimes that were allegedly committed in the previous stage of the study. The alibi was provided across three conditions of recall cue, informing participants prior to alibi provision about the time in which the alleged crimes happened (time-only cue), the location of alleged crimes (location-only cue), or both the timing and location of the crimes (time-and-location cue). It was found that participants cued by a location-only interview prompt provided more accurate alibis than did participants cued by a time-only and time-and-location interview prompts. The researchers suggested that in the paired cue condition, the less effective time cue became dominant, resulting in similar findings to what was obtained with the presentation of the time cue alone. Alternatively, they suggested that the paired cue

promoted a narrower memory search than did the location-only cue, consequently decreasing the efficiency of the paired cue in finding accurate matches in memory. Despite a lack of understanding of the findings, Leins and Charman's (2016) findings demonstrate that memory-based interview prompts may affect and even enhance alibi accuracy. In the current thesis, we also drew on memory theory to develop alibi instructions to present to innocent mock suspects prior to alibi prevision to increase their memory output.

Enhancing innocent suspects' memory output during alibi provision. In the present thesis, we sought to enhance innocent mock suspects' memory output in terms of the completeness and accuracy of their alibis in terms of two measures presented in Koriat and Goldsmith's (1996) model of strategic regulation of memory accuracy. Specifically, the model distinguished between *quantity measures* which pertain to the number of (only) correct details that can be remembered, and *accuracy measures* which are used to assess the probability of each reported detail's correctness (i.e., the number of correct details provided [quantity] out of the total number of details provided—correct and incorrect). According to Koriat and Goldsmith's (1996; see also Koriat & Goldsmith, 1994) model, people can enhance the accuracy of the information they report from memory if allowed to freely decide what and how much information to report or withhold. Presenting innocent suspects with pre-alibi instructions that differ in their emphasis on the informativeness and accuracy of information may reveal whether a certain type of such reporting instructions can increase innocent suspects' memory output in terms of the quantity and accuracy rates of their alibis. In the current thesis, we developed such pre-alibi instructions and examined their effects on innocent mock suspects' memory output during alibi provision.

Dealing with interviewers' presumption of guilt. In light of previous findings (Kassin et al., 2003; Hill et al., 2008) on the effects of interviewers' presumption of guilt on innocent suspects non-verbal behaviour, it is possible that this belief also affects the quantity and accuracy of their alibis. If this is the case, further research should be devoted to reducing instances of guilt presumption. However, to develop effective means to reduce such instances, it is first necessary to examine whether interviewers' guilt presumption affects innocent suspects verbal behaviour during alibi provision. In the current thesis, we examined the effect of an interviewer displaying behaviour consistent with presuming guilt on innocent mock-suspects' alibis in terms of the completeness and accuracy of the information provided.

Thesis Overview

The present thesis comprises four studies: three experiments and one survey. Below is a summary of the thesis chapters. Each study chapter was written independently for submission to a peer-reviewed journal. Thus, some repetitions exist between chapters.

Chapter 2: Using pre-alibi instructions to increase innocent suspects' memory output (Experiment 1). Innocent suspects may fail to provide alibis that would convince interviewers of their innocence due to the reporting of inaccurate and complete information from memory. This chapter presents a study in which we examined whether memory-based reporting instructions presented to innocent mock suspects prior to providing an alibi increased their memory output when reporting about past actions. Specifically, we were interested in the effects of these pre-alibi instructions on the quantity (of correct details) and accuracy rates of the alibis. The participants of particular interest in this study were innocent mock suspects who, following the completion of a number of non-criminal tasks, provided an alibi to convince an interviewer of their innocence of a theft allegedly committed in the task

room. Critically, prior to providing their alibi, participants were provided with one of three types of pre-alibi instructions that emphasised the informativeness of information, its accuracy, or both its informativeness and accuracy. Participants in a control condition received no special reporting instructions. To better establish that any effects of the pre-alibi instructions on the innocent mock suspects' alibis would be due to effects on reporting behaviour (cf. information-disclosure strategy), this study also included a sample of participants in the role of guilty mock suspects; such suspects were previously found not to rely on their memory to provide their alibi (Hartwig et al., 2010; Strömwall et al., 2006). We predicted that the pre-alibi instructions would only affect the quantity and accuracy rates of alibis of innocent mock suspects.

Chapter 3: Examining the effects of pre-alibi instructions on innocent suspects' memory output for past actions and corroborating evidence (Experiment 2). To support their alibi, suspects might provide details about evidence that would corroborate their alibi. However, the same memory processes that may fail innocent suspects to report accurately about their past actions and whereabouts may also fail them to report accurately about corroborating evidence. The study presented in this chapter sought to extend the findings of Experiment 1 by examining whether pre-alibi instructions enhanced innocent mock suspects' memory output not only for their alibi (i.e., past actions and whereabouts) but also for alibi-corroborating evidence. Participants were innocent mock suspects who completed several tasks outside the lab, with each task ending with participants generating evidence that accounted for their whereabouts. Upon returning to the lab and after being accused of committing a theft that occurred while they were away, participants were asked to provide an alibi across three pre-alibi instructions conditions. These pre-alibi instructions instructed them to report accurately and informatively about what they

had done during the critical time period of their alibi or about what they had done during the critical time period of their alibi *and* the evidence that could corroborate their alibi. Control participants were only asked to report about their time while away from the lab, without being instructed regarding they type of information they should report about nor how accurate and informative their alibi should be. As in Experiment 1, we examined participants' performance in terms of the quantity of correct details and accuracy rates of their alibis. However, this time, we examined these two measures also specifically with respect to details concerning the evidence generated by participants. We expected that the number of correct details provided in the entire alibi and that pertaining specifically to evidence details would be larger in both manipulation conditions than in control condition, but highest in the pre-alibi instructions that emphasized accurate and informative reporting about both participants' actions and corroborating evidence.

Chapter 4: Examining the effect of presuming guilt on the verbal output of innocent suspects during brief interviews (Experiment 3). Research has shown that interviewers who approach interviews with suspects while already believing they are guilty of a crime ask more guilt-presumptive questions and conduct more aggressive interviews than when believing that the suspects are innocent (Kassin et al., 2003; Hill et al., 2008). This research has also shown that when innocent suspects are interviewed by a guilt-presumptive interviewer (vs. innocence-presumptive or neutral interviewer), they appear more nervous and defensive, ultimately perceived as guilty by neutral judges. In the study presented in this chapter, we explored how an interviewer's presumption of guilt communicated to innocent mock suspects via the interviewer's words and behaviour affected such participants' memory output in terms of the quantity and accuracy of their alibis. Participants were innocent mock suspects who, following the completion of a number of tasks, provided an alibi to convince an

interviewer of their innocence of a theft. Critically, before providing their alibi, the interviewer implied to participants that she believed that they were guilty or innocent of the theft, or that she had no belief about their responsibility for the theft. We identified and tested two possible predictions pertaining to the number of correct details and accuracy rates of participants' alibis. On the one hand, research (Granhag, Clemens, & Strömwall, 2009) has demonstrated that high (vs. low) levels of suspicion caused guilty-mock suspects to provide more informative statements, presumably because participants felt more responsible to convince the interviewer of their innocence. Accordingly, we predicted that after perceiving the treatment of the guilt-presumptive interviewer as a result of a self-fulfilling prophecy sequence, the alibis of participants in the guilty-belief condition would include the largest number of correct details with highest accuracy rates. The alibis of participants in the innocent-belief condition, in contrast, would include the smallest number of correct details with lowest accuracy rates. However, research (Vrij, Mann, Kristen, & Fisher, 2007) has also shown that accusatory interview styles caused guilty suspects to provide the shortest statements, perhaps because accusatory interviews cause suspects to be less forthcoming. Thus, it was also considered possible that presumed-guilt participants would provide the smallest number of correct details with poorer accuracy rates while alibis of participants in the innocent-belief condition would include the largest number of correct details and be the most accurate.

Chapter 5: Beliefs about innocent suspects' alibis: A survey of lay people in the United Kingdom, Israel, and Sweden. This chapter presents a survey disseminated among lay people in the UK, Israel, and Sweden. Participants completed a survey comprising eight questions which asked them for their beliefs about the verbal behaviour of innocent suspects during alibi provision and the issue of interviewer's presumption of guilt. These participants represent members of the public

who may (i.e., UK participants) serve jury duty and be asked to judge the believability of alibis of innocent suspects in court. Thus, it is important to discover what beliefs lay people hold regarding innocent suspects' alibis generation, whether they acknowledge that innocent suspects may provide incorrect information and the reasons for that, and whether they acknowledge that alibis may be provided to a guilt-presumptive interviewer.

Chapter 6: General Discussion. In the final chapter of the present doctoral thesis, the key findings are summarised and discussed in terms of theoretical and practical implications. In addition, the contributions of the findings are examined with respect to the wider literature. Finally, limitations of the current thesis are outlined and routes for further research are suggested.

Chapter 2: Using pre-alibi instructions to increase innocent suspects' memory output

Abstract

Innocent suspects often provide unconvincing alibis due to memory fallibility. In this research, we examined whether memory-based pre-alibi instructions enhanced the quantity (of correct details) and accuracy of alibis of innocent mock suspects. Innocent and guilty mock suspects provided an alibi across three conditions of pre-alibi instructions emphasizing the informativeness of information provided, its accuracy, or both its informativeness and accuracy. Control participants received no special instructions. The quantity measure differed by pre-alibi instructions conditions only for innocent mock suspects. Specifically, the number of correct details provided by the innocent mock suspects was larger when pre-alibi instructions focused on both the informativeness and accuracy of information (cf. control condition), without compromising accuracy. We discuss the potential of pre-alibi instructions to enhance innocent suspects' memory output during alibi provision while stressing the need to further research innocent suspects' alibi generation and provision.

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Introduction

When suspects report about their activities and whereabouts for the timeframe of an alleged crime to convince an interviewer of their innocence, this statement becomes their *alibi* (Burke, Turtle, & Olson, 2007; Olson, 2013). However, innocent suspects may fail to provide a convincing alibi due to the reporting of mistaken and/or partial details (Olson & Charman, 2012; Olson & Wells, 2004, 2012). In this research, we explored whether memory-based pre-alibi instructions increased memory output of innocent mock suspects during alibi provision.

Research has shown that providing an accurate alibi can be challenging for truthful suspects. For example, Olson and Charman (2012) asked participants to provide four initial alibis: for two time periods on a date six to 14 weeks earlier (i.e., distant-past alibis) and for two time periods on a date three days earlier (i.e., near-past alibis). Participants generated fewer distant-past alibis than near-past alibis. Critically, 36% of the initial alibis provided turned out to be mistaken following a 48-hour period during which participants reviewed their initial alibi. Similarly, participants in Strange, Dysart, and Loftus (2014) provided an initial alibi for a time period three weeks prior to the test session. Then, after one week during which participants attempted to corroborate their alibi, they provided their alibi again for the same time frame. Strange et al. (2014) found that both alibis were only consistent for 53% of the details, suggesting that many of the details provided in the initial alibis were incorrect.

Despite being motivated to be accurate and facing serious consequences for not being believed, innocent people may provide incomplete and/or incorrect alibis due to the limitations of human memory (Schacter, 1999; Tourangeau, 2000). For example, unless the person was taking part in an unusual activity during the time of the alleged crime, it is most likely that s/he had encoded any (subsequently) relevant details superficially (Crozier, Strange, & Loftus, 2017; Tourangeau, 2000). As time

goes by, details of experiences that were encoded are forgotten (Pertzov, Manohar, & Husain, 2017; Tourangeau, 2000) and/or may be distorted if, following the to-be-remembered event, the rememberer is exposed to misinformation which is then integrated with the original memory (Loftus, Miller, & Burns, 1978; see Frenda, Nichols & Loftus, 2011, for a review). Despite these common memory problems, alibi evaluators (e.g., police interviewers) overestimate truthful suspects' ability to provide accurate alibis (Burke et al., 2007; Dysart & Strange, 2012; Olson & Wells, 2012). For example, in a survey conducted among law enforcement personnel (Dysart & Strange, 2012), not one respondent (out of 35) provided memory-related factors as a potential reason for erroneous alibis when asked "why a suspect might be mistaken about their alibi after a 10-minute delay between the time in question and the interview?" (p. 19). In fact, when respondents were asked whether a suspect could be wrong about where s/he were when interviewed 10 minutes after the critical time frame, 93% of them (out of 63) reported that "it was very or extremely unlikely that the suspect could be wrong" (p. 19). Nevertheless, findings show that memory traces may be forgotten in a short matter of *seconds* (see Pertzov et al., 2017; Ricker & Cowan, 2010).

Critically, alibi evaluators may perceive erroneous or incomplete alibis as indicative of deception (Burke et al., 2007; Dysart & Strange, 2012; Olson & Charman, 2012), ultimately contributing to the wrongful conviction of innocent people (Crozier et al., 2017; Wells et al., 1998). However, to date, no other research (to our knowledge) has focused on developing techniques to explicitly support the provision of accurate and complete alibis by innocent suspects. In a notable exception, Leins and Charman (2016) demonstrated the effects of recall cuing on alibi accuracy, demonstrating that alibis of participants who were cued by a location-only interview prompt were more accurate than alibis of participants cued by a time-only or time-

and-location interview prompt. As such, their research has provided support for the effectiveness of interview prompts in increasing alibi accuracy, encouraging further research on the enhancement of truthful suspects' memory output during interviews.

In this vein, the current research explored whether the memory output of innocent mock suspects during alibi provision could be enhanced by presenting them with specific reporting instructions before alibi provision. According to Koriat and Goldsmith's (1996; see also Koriat & Goldsmith, 1994) model of strategic regulation of memory accuracy, people can enhance the accuracy of the information they report from memory if allowed to freely decide what and how much information to report or withhold. The pre-alibi instructions developed and tested in the present research differed in their emphasis on the informativeness and accuracy of information to differently affect truthful rememberers' decision regarding the informativeness and accuracy of the details provided in their alibi. Presenting participants with different types of pre-alibi instructions that differed in their emphasis on the informativeness and accuracy of information allowed to examine whether a certain type of such reporting instructions can increase innocent suspects' memory output during alibi provision. We examined the effects of the pre-alibi instructions on participants' memory output in terms of two measures presented in Koriat and Goldsmith's (1996) model. Specifically, the model distinguished between *quantity measures* which pertain to the number of (only) correct details that can be remembered, and *accuracy measures* which are used to assess the probability of each reported detail's correctness (i.e., the number of correct details provided [quantity] out of the total number of details provided—correct and incorrect). Thus, the present research is the first to examine the effects of memory-enhancing interview techniques on truthful suspects' memory reporting in terms of these two measures (cf. gross accuracy estimations as in Leins & Charman, 2016, and Olson & Charman, 2012).

Previous research has already attempted to increase the quantity and accuracy of rememberers' memory output in the context of mock *eyewitnesses* (e.g., Hope, Mullis, & Gabbert, 2013; Pansky & Nemets, 2012). However, several differences exist between suspect alibis and eyewitness testimony. Most notably, while an unintentionally inaccurate eyewitness statement may harm another person (e.g., the suspect), a mistaken alibi may harm the rememberer her/himself. This suggests that when reporting from memory, eyewitnesses and suspects may undergo different motivational and memorial processes which may inherently differently affect their reporting behaviour. Thus, the reporting behaviour of suspects should be examined separately from that of eyewitnesses.

In the present research, the participants of particular interest were innocent mock suspects who completed a number of non-criminal tasks, after which they were accused of committing a theft in the task room. Then, to convince an interviewer of their innocence, they provided an alibi under pre-alibi instructions that emphasised the informativeness of information, its accuracy, or both its informativeness and accuracy. Participants in a control instructions condition received no special reporting instructions. We included the individual accuracy and informativeness instructions conditions in addition to the combined instructions condition to enable us (in case of obtaining effects of the instructions) to conclude more precisely whether it was the combination of the accuracy and informativeness components that was more effective or only their individual presentation (see Leins & Charman, 2016, for similar use of individual and combined interview prompts). We also included a sample of lying participants in the role of guilty mock suspects. Previous research has shown that, compared with innocent suspects, guilty suspects tend not to rely on their memory to provide their alibi, but rather on pre-planned verbal strategies of how much and what information to report (Hartwig, Granhag, Strömwall, & Doering, 2010; Strömwall,

Hartwig, & Granhag, 2006). This deceptive condition was included for comparison purposes to better establish that any effects of the pre-alibi instructions on truth-tellers' alibis would be due to effects on memory (cf. information-disclosure strategy).

As innocent suspects tend to cooperate with interviewers (DePaulo et al., 2003; Hartwig, Granhag, & Strömwall, 2007) and to rely solely on their memory (more so than guilty suspects) to provide their alibi (e.g., Culhane, Hosch, & Kehn, 2008; Olson & Charman, 2012), they were more likely to report differently based on reporting instructions. Thus, we predicted that the performance of the innocent mock suspects would reflect effects of the different pre-alibi instructions in terms of the quantity (of correct details) and accuracy rates of the details provided. Since liars tend during interviews to adhere to a pre-planned verbal strategy (Hartwig et al., 2010; Strömwall et al., 2006), we predicted that the reporting behaviour of the guilty mock suspects would not express effects of the pre-alibi instructions. In sum, Hypothesis 1 predicted an interaction effect between participants' veracity and the pre-alibi instructions on both quantity of correct details and accuracy rates of participants' alibis.

One prominent prediction of Koriat and Goldsmith's (1996) model is that of a quantity-accuracy tradeoff, whereby an account comprising fewer correct details is likely to be comprised of a high accuracy rate, whereas a memory report comprised of a large number of correct details is likely to include a lower percentage of accurate details overall. Thus, we expected that among truth tellers, effects of the accuracy instructions on accuracy rates would be accompanied by a decrease in quantity of correct details provided because of the emphasis of these instructions on the accuracy of information. In contrast, we expected that effects of the informativeness instructions on the quantity measure would be accompanied by a decrease in accuracy

rates because of the emphasis of these instructions on the amount of information provided. However, we did not expect a quantity-accuracy tradeoff to accompany effects of the combined accuracy and informativeness instructions because these instructions emphasized both the amount of information provided and its accuracy (Hypothesis 2).

Method

Design

A 2 (veracity: truth tellers, liars) × 4 (pre-alibi instructions: accuracy, informativeness, accuracy and informativeness, control) between-subjects design was used. Participants were randomly assigned to one of eight experimental conditions (n = 24 per condition). The dependent variables were the quantity measure and accuracy rates of alibis.

Participants

Two-hundred and ten native English-speaking students and employees at a university in the United Kingdom participated in the study for course credit or £5. Additionally, participants had a chance to enter a raffle for £10 (see Procedure). Eighteen participants did not follow the tasks instructions correctly and their data were not used, resulting in a final sample of 192 participants (43 males,149 females, aged 18-40 years [M = 20.24, SD = 3.71 years]). We performed a post-hoc sensitivity analysis (using G*Power 3.1.9.2; see Faul, Erdfelder, Lang, & Buchner, 2007) to determine the effect size we might detect with reasonable power given our sample size. With an alpha of .05, a power of .80, and a total sample size of N = 192, we could expect to detect a small effect size, f = 0.24 (η^2 = .05), for a two-way ANOVA with eight conditions.

Materials

Non-criminal tasks. Six non-criminal tasks, requiring participants to perform various actions involving different objects around the task room, were used. The tasks were selected following a pilot study in which nine participants completed 10 such tasks created for the study, and then freely wrote down all the details that they remembered about each task. The six tasks with the highest average of information provided across all pilot participants were selected for inclusion in the study: finding course information online (M = 77.78, range: 32-119); matching name tags with people's photos according to a written description (M = 90.67, range: 22-239); sorting cards according to colour and size (M = 72.44, range: 31-147); selecting birthday dates and marking them on a calendar (M = 68.89, range: 27-143); assembling shelves (M = 68.89, range: 34-112); and, locating hidden headphones and speakers and testing them on a laptop (M = 86.33, range: 30-207).

Mock crime. Liars were instructed to search the room for a memory stick and copy onto it one of six "confidential" files from a laptop and then delete all these files from the laptop. They were asked to keep the memory stick with them and hide it from the experimenter when leaving the task room.

Task booklet. Instructions for each task were provided to participants on a separate page in a booklet. For all participants, the first page provided general task-completion instructions (e.g., to complete each task one at a time). Truth tellers were then provided with instructions for the six non-criminal tasks. Liars, in contrast, were then provided with instructions for three non-criminal tasks, followed by the instructions for the mock crime. The order of the non-criminal tasks was counterbalanced between participants. Additionally, truth tellers and liars were matched such that the three non-criminal tasks completed by each liar were the same

first three tasks (and in the same order) that were completed by a truth teller in the same pre-alibi instructions condition.

Pre-alibi instructions. Two pre-alibi instructions were prepared: instructions emphasising accuracy (accuracy pre-alibi instructions) and instructions emphasising informativeness (informativeness pre-alibi instructions). Participants in the *accuracy instructions condition* were instructed as follows:

> It is very important that the information in your alibi is as accurate as possible. Avoid guessing about details you cannot remember. To achieve an accurate alibi, make sure that every piece of information you report in your alibi about each task is as accurate as possible.

Participants in the *informativeness instructions condition* were presented with the following instructions:

> It is very important that the information in your alibi is as informative as possible.
>
> To achieve an informative alibi, make sure that every piece of information you report in your alibi about each task is as informative as possible, such that a person who has not completed those tasks will be able to complete them perfectly just by reading your alibi.

Participants in the combined *accuracy and informativeness instructions condition* received both of these sets of instructions, first receiving the accuracy instructions followed immediately by the informativeness instructions.

Post-alibi questionnaire. The post-alibi questionnaire contained 14 open-/close-ended questions. Of relevance to the present study are the following five

questions[1]. Participants were asked to indicate their level of motivation to appear convincing while providing their alibi (1 = *Not motivated at all*, 7 = *Extremely motivated*; adapted from Jundi et al., 2013). As a veracity-manipulation check, participants rated on a scale of 0%-100% the truthfulness of their alibi (0 = *Everything I wrote was false*, 100 = *Everything I wrote was true*; adapted from Clemens, Granhag, & Strömwall, 2013). Also, using two separate questions, participants rated their perception of the likelihood that they would enter a draw of winning £10 and be asked to provide a second, hand-written alibi (for both questions: 1 = *Not likely at all,* 7 = *Most likely*). Additionally, participants freely described the strategies they had used to appear truthful and convincing while providing their alibi (adapted from Clemens et al., 2013).

Procedure

Task completion and accusation. When invited to participate in the study, participants were not informed of the mock accusation to ensure that they would not plan any alibi in advance. On arrival at the lab, the participants—who completed the session individually—first gave their informed consent to participate in the study, followed by completing a questionnaire about their age, gender, and occupation. The experimenter then asked the participants to complete several tasks in a room following specific task instructions provided to them in the task booklet, with no time limit. In the task room, truth tellers completed six non-criminal tasks. Liars completed three non-criminal tasks and then committed the mock crime. Liars were aware that they were committing a "crime" because the instructions asked them to "steal the memory

[1] The remaining nine questions were exploratory and asked participants to rate how important it was for them to provide an accurate and informative alibi; their level of preparation for their alibi; their belief regarding how convincing their alibi was; indicate which aspects of their alibi would convince the interviewer of their guilt and innocence; and, indicate their perception of the verifiability of their alibi.

stick without acting suspiciously". Truth tellers were also exposed to the memory stick as they had to move it to access an object needed for a certain task. All participants were surreptitiously filmed during tasks completion to provide ground truth for later calculation of quantity and accuracy measures. On completion of the tasks (time to complete all six tasks based on a random sample of 10 video clips: $M_{\text{minutes}} = 42.48$, $SD = 8.58$), the participants left the task room to meet the experimenter.

En route to another room, the participants were left alone for approximately one minute while the experimenter went "to check something". When the experimenter returned, the participants were informed that a memory stick was missing from the task room, and that as the individuals who had been in the room most recently, they were suspected of stealing it. The Participants were told that they would soon be asked to provide an alibi to convince an interviewer that they had not stolen the memory stick. Following standard procedures used to encourage participants to provide a convincing alibi (e.g., Hartwig et al., 2007; Vrij et al., 2009), the experimenter informed participants that if they succeeded in convincing the interviewer of their innocence, they would enter a prize draw for £10. If they failed to convince the interviewer, they would be required to provide a second, hand-written alibi.

Alibi provision. In the interview room, all participants were informed that their task was to provide a written (typed) description of what they did while in the task room and that the interviewer would later evaluate the veracity of their alibi. They were told that this interviewer did not know whether they were guilty or innocent of the theft and would determine this on the basis of their alibi. Participants were then reminded of the potential monetary incentive for convincing

the interviewer of their innocence and the potential sanction for failing to do so. Next, all participants were told that they should report in their alibi all the details that they could remember about each task: the sequence of actions, objects they had used, and anything else that had happened during tasks completion. Truth tellers were asked to be truthful in their alibi, whereas liars were told that they must lie about stealing the memory stick. All participants were told that they would shortly be given 10 minutes to prepare their alibi. Liars were informed that truth tellers completed three additional tasks and that to cover up the theft of the memory stick, they should lie about the completion of these additional tasks. To create their cover story, liars were told that during preparation time, they would be provided with the full instructions for those additional tasks (thus potentially enabling liars to report correct details in their alibi even about tasks that they had not completed). To avoid providing liars with certain materials only for preparation for the completed tasks, they were informed that they would also be provided with a list of the task names and a brief description of instructions of the tasks that they had completed. For the same reason, truth tellers were also told that they would have access to this list of task names and brief description of task instructions. This brief description of instructions comprised between one and three short sentences (which were also presented during alibi provision to all participants), e.g., “Assemble shelves according to instructions”. Importantly, this brief description of instructions was remotely as detailed as were the instructions provided to participants during task completion. The experimenter then delivered the pre-alibi instructions, depending on the pre-alibi instructions condition. Participants in the control condition received no further instructions following the general instructions just described. After 10-minutes preparation, the experimenter re-entered the room and asked the participants to read from the computer screen the full (alibi task) instructions she gave them before preparation time. The participants then

typed their alibi using the computer. All participants reported about the completed tasks in the same order in which those were completed, and liars lied about the completion of the three additional tasks in the same order in which their matched truth tellers completed and then truthfully reported about them (meaning that the order in which liars lied about completing the three final tasks was also counterbalanced). Finally, the participants completed the post-alibi questionnaire, were debriefed, and compensated for their participation.

Alibi Coding

The first author, blind to the veracity and pre-alibi instructions conditions to which participants were assigned, coded each alibi into Action, Object, and Settings categories (see Wright & Holliday, 2007) to be able to determine the correctness of the individual details provided (see Koriat & Goldsmith, 1994). Next, to determine the correctness of the categorised details for the tasks completed by all participants, each alibi was compared against the video clips of participants performing the tasks. A categorised detail was deemed "correct" if it was described in the alibi in the same way as it appeared in the video clip. If described incorrectly, or if it did not appear in the video clip but was described in the alibi, the categorised detail was marked "incorrect". The correctness of the details comprising liars' reports about the three tasks that they had not completed was determined by comparing the categorised details of those reports against the full task instructions provided to them during alibi preparation. Finally, a quantity measure and an accuracy rate were calculated for the entire alibi of each participant: the quantity measure was calculated by totalling the number of correct details provided across all tasks per each participant, and an accuracy rate was calculated by dividing the total number of correct details provided

across all six tasks in an alibi by the total number of details provided overall (i.e., correct and incorrect) in that alibi.

Twenty alibis (10.42%) were coded by a second, independent coder blind to participants' veracity, pre-alibi instructions conditions, and the aims of the research. Inter-coder reliability, computed using intra-class correlation coefficient (ICC), were .96, $p < .001$ for the quantity measure and .78, $p < .001$ for the accuracy rate.

Results

Motivation and Veracity-Manipulation Checks

A substantial percentage (91%) of participants were motivated to appear convincing while providing their alibi (i.e., marked 5 or higher on the response scale; $M = 6.19$, $SD = 0.98$, range: 2-7). A two-way ANOVA with veracity and pre-alibi instructions as the independent variables showed no differences between conditions in participants' motivation to appear convincing, F_{veracity} (1, 180) = 1.95, $p = .164$, $f = 0.10$; $F_{\text{pre-alibi instructions}}$ (3, 180) = 0.13, $p = .944$, $f = 0.05$; $F_{\text{interaction}}$ (3, 180) = 0.35, $p = .790$, $f = 0.08$. Next, we compared truth tellers' and liars' perception of the truthfulness of their alibi. Truth tellers' ($M = 98.06$, $SD = 4.49$) ratings of the truthfulness of their alibis were significantly higher than liars' ($M = 61.47$, $SD = 18.10$) ratings of the truthfulness of their alibis, $t(105.74) = 19.11$, $p < .001$, $d = 2.76$, 95% CI [2.36, 3.15]. Lastly, we conducted two ANOVAs to examine participants' estimations of the likelihood that they would (i) enter the prize draw and (ii) be asked to hand-write a second alibi. Only the main effect for veracity was statistically significant for both the prize-draw likelihood, $F(1, 180) = 23.82$, $p < .001$, $f = 0.36$, and the alibi-writing requirement, $F(1, 180) = 40.98$, $p < .001$, $f = 0.47$. Specifically, truth tellers' ($M = 4.48$, $SD = 1.32$) estimations of the likelihood that they would enter the prize draw were higher than those of liars ($M = 3.58$, $SD = 1.19$), $d = 0.72$, 95% CI

[0.42, 1.01]. In contrast, liars' (M = 3.97, SD = 1.28) estimations of the likelihood that they would have to write a second alibi were higher than those of truth tellers (M = 2.82, SD = 1.19), d = 0.93, 95% CI [0.63, 1.23]. Thus, participants complied with our instructions to report truthful versus deceptive alibis and were very motivated to convince in their alibi.

Effects of Pre-Alibi Instructions and Veracity on Quantity and Accuracy Rates

To examine the effects of the pre-alibi instructions and veracity on participants' memory output, two 2 × 4 (Veracity [truth tellers, liars] × Pre-Alibi Instructions [accuracy, informativeness, accuracy and informativeness, control]) ANOVAs were conducted with quantity of correct details and accuracy rates as dependent variables. Means and standard deviations are presented in the upper section of Table 2.1.

Effects on quantity of correct details. There was a significant main effect of veracity for the number of correct details provided, $F(1, 184) = 20.86$, $p < .001$, f = 0.32. Specifically, truth tellers provided significantly more correct details than did liars, d = 0.64, 95% CI [0.35, 0.93]. There was also a significant main effect of the pre-alibi instructions for the number of correct details provided, $F(3, 184) = 4.50$, p = .004, f = 0.25. Tukey post-hoc comparisons indicated that participants in the combined accuracy and informativeness instructions condition provided significantly more correct details than did control participants, p = .003, d = 0.72, 95% CI [0.31, 1.13]. There were no significant differences in the number of correct details provided by participants in the combined accuracy and informativeness instructions condition and those in the accuracy instructions condition, p = .197, d = 0.35, 95% CI [-0.05, 0.76] nor between the combined instructions condition and the informativeness instructions condition, p = .657, d = 0.20, 95% CI [-0.20, 0.60]. Additionally, no

significant differences in the number of correct details provided were found between the accuracy instructions condition and the informativeness instructions condition, p = .839, d = 0.15, 95% CI [-0.25, 0.55], nor between the control condition and either the instructions condition, p = .391, d = 0.36, 95% CI [-0.04, 0.76], or the informativeness instructions condition, p = .078, d = 0.52, 95% CI [0.11, 0.92]. In contrast to our prediction, the interaction between veracity and pre-alibi instructions for the number of correct details provided was not significant, $F(3, 184) = 1.77$, p = .155, f = 0.16.

Effects on accuracy rates. For accuracy rates, there was a significant main effect of veracity, $F(1, 184) = 33.08$, $p < .001$, f = 0.42. As shown in Table 2.1, truth tellers were significantly more accurate than liars were, d = 0.89, 95% CI [0.60, 1.19]. However, the accuracy rates of the details provided did not differ between the different pre-alibi instructions conditions, $F(3, 184) = 1.64$, p = .182, f = 0.15. Also, in contrast to our prediction, the interaction between veracity and pre-alibi instructions was not significant, $F(3, 184) = 0.08$, p = .971, f = 0.03.

Effects of Pre-Alibi Instructions Within Veracity Conditions

Findings demonstrating that liars base their alibis or cover stories mostly on a pre-planned reporting strategy while truth tellers rely on their memory to provide their alibis (e.g., Hartwig et al., 2010; Olson & Charman, 2012; for a meta-analysis, see DePaulo et al., 2003) suggest that we should observe differences in the memory output of truth tellers between the different pre-alibi instructions conditions. In light of these previous findings, we conducted one-way ANOVAs with pre-alibi instructions as the independent variable and quantity of correct details and accuracy rates as the dependent variable each time within truth tellers and liars separately (for previous research using a similar analysis strategy despite a null interaction, see Nahari & Ben-Shakhar, 2011; Porter et al., 2018; Shaw et al., 2015).

Table 2.1

Means of Quantity of Correct Details and Accuracy Rates (Standard Deviations in Parentheses)

	Quantity			Accuracy Rates		
Pre-Alibi Instructions	Truth Tellers *M* (*SD*)	Liars *M* (*SD*)	Total *M* (*SD*)	Truth Tellers *M* (*SD*)	Liars *M* (*SD*)	Total *M* (*SD*)
Full alibi (six tasks)						
Accuracy	287.38 (103.43)$_{ab}$	201.50 (76.15)$_{a}$	244.44 (99.78)	.98 (0.01)$_{ab}$	.95 (0.07)$_{a}$	.96 (0.05)
Informativeness	291.00 (106.54)$_{ab}$	230.04 (104.01)$_{a}$	260.52 (108.62)	.97 (0.03)$_{a}$	.93 (0.07)$_{a}$	.95 (0.06)
Accuracy and Informativeness	328.50 (136.49)$_{a}$	237.17 (72.35)$_{a}$	282.83 (117.51)	.98 (0.01)$_{b}$	.96 (0.02)$_{a}$	.97 (0.02)
Control	219.67 (74.05)$_{b}$	208.00 (61.65)$_{a}$	213.83 (67.66)	.98 (0.01)$_{ab}$	.94 (0.05)$_{a}$	.96 (0.04)
Total	281.64 (112.83)	219.18 (80.20)	250.41 (102.53)	.98 (0.02)	.94 (0.06)	.96 (0.04)
First three reports						
Accuracy	150.25 (54.40)$_{abc}$	106.25 (49.23)$_{a}$	128.25 (55.94)	.99 (0.01)$_{a}$	.97 (0.05)$_{a}$	.98 (0.04)
Informatvieness	160.75 (54.69)$_{ab}$	133.75 (67.33)$_{a}$	147.25 (62.19)	.98 (0.02)$_{a}$	.97 (0.02)$_{a}$	.98 (0.02)
Accuracy and Informativeness	179.92 (66.34)$_{ab}$	135.46 (46.84)$_{a}$	157.69 (61.09)	.99 (0.01)$_{a}$	.98 (0.02)$_{a}$	.98 (0.02)
Control	118.75 (40.72)$_{c}$	111.33 (36.09)$_{a}$	115.04 (38.24)	.98 (0.02)$_{a}$	.98 (0.02)$_{a}$	.98 (0.02)
Total	152.42 (58.34)	121.70 (51.99)	137.06 (57.22)	.98 (0.02)	.98 (0.03)	.98 (0.03)

Note. Means that do not share a common subscript within column are statistically different at $p < .05$.

There was a significant main effect of the pre-alibi instructions on the number of correct details provided by truth tellers, $F(3, 92) = 4.27$, $p = .007$, $f = 0.37$. Post-hoc Tukey tests showed that truth tellers in the combined accuracy and informativeness instructions condition provided significantly more correct details than did truth tellers in the control condition (see Table 2.1), $p = .004$, $d = 0.99$, 95% CI [0.39, 1.59]. No significant differences in the number of correct details provided by truth tellers were found between the combined accuracy and informativeness instructions condition and the accuracy instructions condition, $p = .549$, $d = 0.34$, 95% CI [-0.23, 0.91], nor between the combined instructions condition and the informativeness instructions condition, $p = .623$, $d = 0.31$, 95% CI [-0.26, 0.88]. Also, no significant differences in this quantity measure were obtained between truth tellers in the accuracy instructions condition and those in the informativeness instructions condition, $p = .999$, $d = 0.03$, 95% CI [-0.53, 0.60], nor between truth tellers in the control condition and those in the accuracy instructions condition, $p = .136$, $d = 0.75$, 95% CI [0.17, 1.34], or between control condition and the informativeness instructions condition, $p = .105$, $d = 0.78$, 95% CI [0.19, 1.36]. In contrast to truth tellers, among liars, the number of correct details provided did not differ significantly between the pre-alibi instructions conditions, $F(3, 92) = 1.10$, $p = .355$, $f = 0.19$.

Furthermore, we also found a significant main effect for the pre-alibi instructions on the accuracy rates of truth tellers' alibis, $F(3, 92) = 3.18$, $p = .028$, $f = 0.31$. Post-hoc Tukey tests showed that truth tellers in the combined accuracy and informativeness instructions condition were significantly more accurate than were truth tellers in the informativeness instructions condition, $p = .028$, $d = 0.67$, 95% CI [0.09, 1.25]. No significant differences in the accuracy rates of the details provided by truth tellers were found between the combined accuracy and informativeness instructions condition and the control condition, $p = .630$, $d = 0.54$, 95% CI [-0.04,

1.11], nor between the combined instructions condition and the accuracy instructions condition, $p = .983$, $d = 0.16$, 95% CI [-0.41, 0.73]. Also, the accuracy rates of truth-tellers' alibis did not differ significantly between the accuracy instructions condition and the informativeness instructions condition, $p = .071$, $d = 0.57$, 95% CI [-0.01, 1.15], nor between the control condition and the accuracy instructions condition, $p = .838$, $d = 0.34$, 95% CI [-0.23, 0.91], or between the control condition and the informativeness instructions condition, $p = .363$, $d = 0.38$, 95% CI [-0.19, 0.95]. Once again, in contrast to truth tellers, the accuracy rates of liars' alibis did not differ significantly between the pre-alibi instructions conditions, $F(3, 92) = 0.60$, $p = .614$, $f = 0.15$; see Table 2.1.

In light of the medium-to-large effect size (Cohen, 1988) of the effect of the pre-alibi instructions on the quantity of correct details among truth tellers, these analyses provide partial support to the enhancing effects of the pre-alibi instructions on the memory output of the truth tellers. Additionally, these findings support Hypothesis 2, in which we predicted that no quantity-accuracy tradeoff would accompany effects of the combined accuracy and informativeness instructions on the quantity and accuracy rates among truth tellers. That is, these instructions were superior to other instructions in affecting the quantity of correct details provided by truth tellers without compromising its accuracy.

The self-reported strategies used by participants to provide a convincing alibi were categorised in a data-driven manner, such that the categories were derived from the strategies themselves. These strategies are available in Supplemental Materials, focusing only on those strategies pertaining to the informativeness and accuracy of participants' alibis.

Quantity and Accuracy Rates in Reports for Completed Tasks Only

It could be argued that our method for calculating the quantity measure and accuracy rates for the full alibi (i.e., all six tasks) for both truth tellers and liars may mean examining two different memory structures, as truth tellers reported about six tasks that they had completed while liars reported only about three tasks that they had completed (followed by reporting about three tasks that they had not completed). Thus, perhaps such calculation does not represent the examination of liars' memory as it does of truth tellers'. Still, in real-life interviews, liars necessarily fabricate some—if not all—of their alibi without relying on their memory (see Hartwig et al., 2010; Strömwall et al., 2006), which is why they are deemed "liars"—a reality that underlies the rationale for our above analyses.

To address this potential critique, we examined again the effects of the pre-alibi instructions on the quantity and accuracy rates of the alibis separately among liars and truth tellers, but this time only for the reports concerning those three tasks that both truth tellers and liars had completed, namely the first three tasks comprising each alibi. Specifically, we conducted separate one-way ANOVAs within each veracity condition with pre-alibi instructions as the independent variable and quantity of correct details and accuracy rates as the dependent variable each time. Means and standard deviations are presented in the lower section of Table 2.1.

As in the overall results for truth tellers, there was a significant main effect for the pre-alibi instructions on the number of correct details provided in the reports concerning the first three tasks that they had completed, $F(3, 92) = 5.23$, $p = .002$, $f = 0.41$. Post-hoc Tukey tests showed that truth tellers in both the combined accuracy and informativeness instructions condition and the informativeness instructions condition provided significantly more correct details than did truth tellers in the control condition, $p = .001$, $d = 1.11$, 95% CI [0.50, 1.72] and $p = .045$, $d = 0.87$, 95% CI [0.28, 1.46], respectively. No significant differences in the number of correct details

provided by truth tellers for the first three tasks that they had completed were found between the combined accuracy and informativeness instructions condition and the accuracy instructions condition, $p = .246$, $d = 0.49$, 95% CI [-0.09, 1.06], nor between the combined accuracy and informativeness instructions condition and the informativeness instructions condition, $p = .621$, $d = 0.32$, 95% CI [-0.25, 0.88]. Also, the number of correct details provided by truth tellers in the reports concerning the first three tasks that they had completed did not differ significantly between the accuracy instructions condition and the control condition, $p = .199$, $d = 0.66$, 95% CI [0.07, 1.24], nor between the accuracy instructions condition and the informativeness instructions condition, $p = .910$, $d = 0.19$, 95% CI [-0.37, 0.76]. In contrast, among liars, as for the full alibi, the effect of the pre-alibi instructions on the number of correct details they provided only in the reports concerning the three tasks that they had completed was not significant, $F(3, 92) = 2.08$, $p = .108$, $f = 0.26$.

Turning to the accuracy rates of the reports of truth tellers for the first three tasks that they had completed, these did not differ significantly between the different pre-alibi instructions conditions, $F(3, 92) = 1.32$, $p = .274$, $f = 0.18$. Also, the accuracy rates of the details provided by liars in the reports for the three tasks that they had completed did not differ significantly between the different pre-alibi instructions conditions, $F(3, 92) = 0.44$, $p = .723$, $f = 0.11$, as for the full alibi.

These results suggest that even when examining only those reports that both truth tellers and (allegedly) liars relied only on their memory to provide, the pre-alibi instructions may still enhance the number of correct details provided only by truth tellers, without compromising accuracy.

Discussion

Drawing on memory theory, we examined whether pre-alibi instructions improved the completeness and quality of alibis of truthful suspects forced to rely on

their memory to provide their alibi. To our knowledge, this is the first attempt to develop memory-based *instructions* (cf. retrieval cues as in Leins & Charman, 2016 or incentives to be informative or convincing as in Leins, 2010) designed to maximize truthful suspects' memory output during alibi provision. In summary, we found that the number of correct details (quantity) provided by truth tellers differed as a result of the pre-alibi instructions, such that truth tellers in the combined accuracy and informativeness instructions condition reported significantly more correct details than did truth tellers in the control condition, without compromising accuracy. In contrast, for liars, neither the number of correct details provided nor the accuracy rates of their alibis differed across pre-alibi instructions conditions.

We did not obtain the predicted significant interaction effects between pre-alibi instructions and veracity for either of the dependent measures. This is likely due to a power issue in our sample, given that the actual effect sizes observed for the quantity measure ($f = 0.16$) and accuracy rates ($f = 0.03$) are both lower than the effect size we could expect to detect according to the post-hoc sensitivity analysis ($f = 0.24$). Nevertheless, the effect sizes of the main effect of the pre-alibi instructions among innocent mock suspects was medium-to-large ($f = 0.37$; Cohen, 1988), and the effect size for the difference in quantity measure between the accuracy and informativeness instructions condition and control condition was large ($d = 0.99$; Cohen, 1969). Although the findings concerning the lack of effects of the pre-alibi instructions on the dependent measures among the guilty participants were based on analyses conducted following a non-significant interaction, the current findings allow us to tentatively suggest that the pre-alibi instructions may enhance innocent suspects' memory output. Nevertheless, further research on the effects of such instructions should be conducted using larger sample sizes to ensure that the relatively large effect sizes obtained here are replicated.

The effect of the pre-alibi instructions on the memory quantity of the innocent mock suspects and the magnitude of these effects, combined with the likely lack of systematic effects on the reporting behaviour of the guilty mock suspects, suggests that the influence of the pre-alibi instructions was on truth-tellers' memory reporting behaviour. This conclusion gains further support from the finding that the quantity measure differed between the pre-alibi instructions conditions only among truth tellers even for the reports that allegedly allowed liars to rely only on their memory (i.e., reports for the three tasks completed by all participants). Presumably, the pre-alibi instructions did not affect guilty mock suspects' memory output for these specific reports because, throughout their entire report, they adhered to a pre-planned strategy concerning the provision of their alibi. Interestingly, for the full alibis, quantity measure of truth tellers was higher in the combined accuracy and informativeness instructions condition compared with control condition, but when examining the first half of their alibis, the quantity measure was additionally higher in the informativeness instructions condition compared with control condition. This may be because reporting about more tasks "averaged" participants' reporting behaviour such that, ultimately, the instructions that affected their reporting behaviour the most were the combined pre-alibi instructions. Nevertheless, the most notable part of the findings concerning the first half of participants' alibis was that they replicated the finding that innocent suspects' quantity measure differed as a result of the pre-alibi instructions whereas that of guilty mock suspects did not (although, as mentioned, the findings about this lack of effects among the guilty participants were based on analyses conducted following an interaction that nonetheless did not reach statistical significance).

In the present research we focused on examining the effects of the pre-alibi instructions on the memory performance of participants. However, we cannot

conclude for certain regarding the underlying mechanisms that yielded the obtained findings, and several explanations may be appropriate. For example, it may be that the difference between the innocent mock suspects in the number of correct details provided as a result of the pre-alibi instructions reflects differences in how these participants placed their report criterion before providing information (see Koriat & Goldsmith, 1996; for a review see Goldsmith, 2017). Because innocent suspects are usually forthcoming during interviews (DePaulo et al., 2003), it may be that truth tellers in all pre-alibi instructions conditions were already focused on providing a large number of correct details before hearing the pre-alibi instructions (see, e.g., Strömwall et al., 2006), suggesting that they applied a lax report criterion. However, explaining to truth tellers in the combined accuracy and informativeness instructions condition how to provide a correctly informative alibi might have led them to use a relatively lax report criterion (compared with control participants), resulting in them reporting more correct details (see Olson & Charman, 2012, for a similar explanation).

Alternatively, it may be that the pre-alibi instructions affected truth-tellers' reporting behaviour by affecting their perception of the level of detail that the interviewer expected them to provide. Specifically, it is likely that participants in the combined accuracy and informativeness instructions condition perceived that the interviewer expected them to provide a detailed alibi. In contrast, participants in the control condition assumed that the interviewer only expected from them to provide a basic description of their actions in the task room. Another possible explanation is that although the instructions were designed to affect participants' reporting behaviour, the combined accuracy and informativeness instructions caused participants to conduct a more thorough memory search than participants in other instruction conditions. Although the current data do not allow us to determine the exact processes that led to

increased output in the combined instructions condition among truth tellers, these findings demonstrate the importance of the nuances of pre-alibi instructions.

High accuracy rates were observed for truth-tellers' reports. This is not entirely surprising, as free reporting usually results in accurate information (Koriat & Goldsmith, 1994, 1996). The high accuracy rates may also account for the lack of quantity-accuracy trade-off among truth tellers in the accuracy and informativeness instructions condition, although this lack of trade-off may also be due to the fact that these instructions emphasised both accuracy and informativeness of information. However, we acknowledge that the short time interval between the completion of the tasks and the provision of alibis may also account for these high accuracy rates. Our aim in the present research was to examine the effect of the pre-alibi instructions on the memory output of truthful suspects. Applying a longer time delay between task completion and alibi provision would increase the likelihood of potential memory contamination which might increase error variance, consequently potentially limiting the ability to statistically detect effects of pre-alibi instructions (see, e.g., Frenda et al., 2011; Loftus et al., 1978; Tourangeau, 2000). Liars' high accuracy rates may be explained by the fact that they had completed half of the tasks they reported about, allowing them to simulate almost perfectly the tasks they described deceptively by also relying on the instructions for the uncompleted tasks they received during preparation period. Future research should examine the effects of pre-alibi instructions on innocent suspects' memory output incorporating a longer delay between the critical event and alibi provision. Nevertheless, the accuracy rates obtained in the present research do not undermine the findings concerning quantity of correct details provided and the ability of pre-alibi instructions to increase innocent suspects' memory output.

The present design, which included a combined accuracy and informativeness instructions condition but also individual pre-alibi instructions conditions allowed us

to determine which component of the pre-alibi instructions was more effective in enhancing truth-tellers' memory output. Individually, the informativeness instructions and the accuracy instructions did not affect truth-tellers' reporting behaviour. As outlined, it may be that truth tellers in all conditions were already occupied with providing a large number of correct details before hearing the pre-alibi instructions. Consequently, asking truth tellers in the informativeness instructions condition to be only informative added nothing to their inherent tendency to be informative, and asking truth tellers in the accuracy instructions condition to be only accurate was not strong enough to compete with their intention to be informative. In contrast, instructing truth tellers in the combined accuracy and informativeness instructions condition to be simultaneously informative and accurate may have clarified (cf. truth tellers in the individual instructions conditions) what the completeness and quality of their alibi overall should be. Our findings suggest that even when truthful suspects already intend to provide an informative alibi (DePaulo et al., 2003; Strömwall et al., 2006), memory-based pre-alibi instructions may guide them how to be correctly informative.

While the sample size of the present study may have been sufficient for conducting a one-way ANOVA to examine the effects of the pre-alibi instructions on the dependent measures among each veracity condition, the present research may have not been adequately powered to detect further differences between individual pairs of pre-alibi instructions conditions (see Brooks & Johanson, 2011). For example, while the difference in the quantity measure between innocent participants in the control condition and those in the accuracy instructions condition was not significant (p = .136), the difference between the group means was nonetheless rather sizeable (with a medium-to-large effect size of d = 0.75; Cohen, 1969). Similarly, the difference in the accuracy measure between innocent participants in the combined accuracy and

informativeness instructions condition and in the control condition was of a medium size (d = 0.54; Cohen, 1969), although non-significant (p = .630). Future research on the effects of several types of such pre-alibi instructions should ensure a sample size adequate for both the ANOVA test and any possible subsequent post-hoc comparisons.

A number of other limitations are associated with the present research. We did not ask participants to report (i) their confidence in the correctness of the details they reported; (ii) the details they retrieved but withheld (i.e., chose not to report), and; (iii) their confidence in the correctness of these withheld details—all of which are necessary to estimate rememberers' report criterion (Koriat & Goldsmith, 1996). Future research should develop a paradigm that would allow the calculation of truth-tellers' (and liars') report criterion to further examine the metacognitive monitoring and control processes underlying alibi provision. Additionally, further research should examine the effects of the pre-alibi instructions on memory output for a more naturalistic event (e.g., completing self-generated actions), with more severe consequences such as paying a monetary penalty (cf. providing a second alibi).

Despite the limitations of the present research, the findings demonstrate the potential effects of memory-based interview techniques particularly in the context of innocent suspects' alibi provision. These findings also illustrate the merit of continuing the research on such interview techniques and may assist other researchers when planning studies in the domain of alibi generation and provision. Although it is premature to suggest that interviewers use the pre-alibi instructions tested in the current research, the increased performance in terms of quantity of correct details in the combined accuracy and informativeness instructions condition among the innocent mock suspects is relevant for both real-life suspects and interviewers. For innocent

suspects, the provision of more correct information may result with the provision of more forensically valuable information that may be used to exonerate innocent suspect, and may decrease the provision of inaccurate information that may be perceived by interviewers as indicating guilt. With respect to interviewers, more correct information provided by suspects may be crucial for making more quick and efficient decisions regarding forward investigative strategies. Developing interviewing techniques that promote complete and accurate alibis of innocent suspects may thus prevent miscarriages of justice, and our findings are a first step in the development of effective pre-alibi instructions to increase memory reports of innocent suspects.

Chapter 3: Examining the effects of pre-alibi instructions on innocent suspects' memory output for past actions and corroborating evidence

Abstract

When providing an alibi to convince an interviewer of their innocence of a crime, innocent suspects should aim to provide verifiable alibi-corroborating evidence. However, due to impaired memory processes, the information innocent suspects report about such evidence may be prone to inaccuracies, which threaten the credibility of their alibi. We examined the effects of memory-based pre-alibi instruction on innocent mock suspects' memory output for their alibi and alibi-corroborating evidence. Participants (N = 78) completed a number of tasks and then provided an alibi to convince the alibi evaluator of their innocence of a theft. Before providing their alibi, participants were instructed to report accurately and informatively about the completed tasks (task-instructions condition) or about the completed tasks and corroborating evidence (enhanced-instructions condition). Control participants did not receive these additional alibi instructions. Results indicated that the number of correct details provided in alibis was greater in both experimental conditions than in the control condition, as predicted. However, in contrast to our prediction, the number of correct details provided did not differ between the enhanced and task pre-alibi instructions conditions. We offer possible explanations for the obtained findings.

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Introduction

To convince an interviewer of their innocence, suspects usually provide an alibi, describing their actions and whereabouts during the critical time of the crime. To support this alibi, suspects might mention potential evidence that would corroborate their alibi (Burke, Turtle, & Olson, 2007; Olson, 2013; Olson & Wells, 2004). However, if the information they report about such evidence is incomplete or inaccurate, the credibility of their entire alibi may be in jeopardy. In the present research, we examined whether providing innocent mock suspects with memory-based reporting instructions prior to providing an alibi improved their memory output for reports about alibi-corroborating evidence.

Research has shown that when providing an alibi, innocent suspects struggle to report accurately about their past actions. For example, Olson and Charman (2012) asked participants to provide two initial alibis for a date six to 14 weeks prior (i.e., distant-past alibis) and two initial alibis for a date three days prior (i.e., near-past alibis) to the test session. Participants provided fewer distant-past alibis than near-past alibis. Further, when participants were given 48 hours to confirm the veracity of their alibis, it transpired that 36% of the initial alibis provided were inaccurate. Similarly, Strange, Dysart, and Loftus (2014) asked participants to provide an alibi for a timeframe three weeks prior to the test session, and then gave them one week to search for alibi-corroborating evidence. After returning to the lab to provide their alibi again for the same time frame, Strange et al. (2014) noted that alibis were consistent for only 53% of the details, suggesting that the initial alibis provided contained a significant amount of inaccurate information.

The difficulties experienced by innocent suspects when attempting to report accurately about past events are a feature of relying on episodic and autobiographical memory to provide information (Burke et al., 2007; Olson & Wells, 2012; Strange et

al., 2014). Due to the limitations of human memory, information recalled by innocent suspects which may exonerate them is likely to be prone to errors and suggestibility (Schacter, 1999; Tourangeau, 2000). For example, people are less likely to thoroughly encode details of events they tend to experience every day and actions they repeat daily (Burke et al., 2007; Tourangeau, 2000). Moreover, with the passage of time, they may find it more difficult to access event details (Pertzov, Manohar, & Husain, 2017; Tourangeau, 2000), especially if these have not been retrieved previously (Schacter, 1999). Additionally, if people are exposed to misinformation following the critical event, it may be integrated with the original memory, eventually distorting it (Loftus, Miller, & Burns, 1978; see Frenda, Nichols & Loftus, 2011 for a review). Alternatively, people may make a "memory-conjunction error" in which they integrate details from memory for several different events into an erroneous report about an event that did not occur (Reinitz, Lammers, & Cochran, 1992; see also Devitt, Monk-Fromont, Schacter & Addis, 2016).

With respect to the evidence that suspects might report to support their alibi, two main types of such evidence can be outlined. This evidence may be physical (i.e., *object evidence*), such as a timed and dated receipt from a shop or a security-camera recording. Alternatively, the evidence may be in the form of information from another person (such as family, friends, or strangers) that corroborates the suspect's version of events (i.e., *person evidence*). Critically, the evidence must account for the presence of the suspect at a certain place at a certain time (Burke et al., 2007; Olson & Wells, 2004). Research has shown that, indeed, innocent suspects tend to provide verifiable details that can be used by the interviewer to check and ultimately support their alibi (i.e., the *verifiability approach*; Nahari, Vrij, & Fisher, 2014a, 2014b).

Although innocent suspects are inclined to report details about evidence that can corroborate their alibi, the same memory processes that make it difficult for them to

report accurately and completely about their past actions may also make it difficult for them to report about evidence. For example, innocent suspects may make an evidence-related memory-conjunction error (Reinitz et al., 1992; see also Odegard & Lampinen, 2004) by claiming to have a bank receipt from a Monday two weeks prior to the interview, when in fact this receipt was provided to them on a Tuesday one week earlier. Findings from Olson and Charman (2012) indicated that, out of the initial alibis that were revised, 68% included mistakes pertaining to the corroborating evidence that participants initially reported to have.

When innocent suspects provide mistaken details in their alibi, alibi evaluators (e.g., police interviewers) tend to fail to attribute such mistakes to memory failures, and instead perceive these mistakes as indicative of lying (Burke et al., 2007; Dysart & Strange, 2012; Olson & Charman, 2012). Providing mistaken details about alibi-corroborating evidence may also result in the suspect being disbelieved (Burke et al., 2007; Culhane & Hosch, 2012; Olson & Wells, 2004). Consequently, innocent suspects' failure to provide accurate and complete details in their alibi or about alibi-corroborating evidence due to memory failures may result in a wrongful conviction (Crozier, Strange, & Loftus, 2017; Wells et al. 1998).

To minimize the reporting of inaccurate and incomplete information by innocent suspects, interviewers should be able to assist innocent suspects to provide more complete and accurate information in their alibis through the use of memory-supporting interviewing techniques. Portnoy et al. (see Experiment 1) developed memory-based reporting instructions to examine whether these would facilitate innocent mock suspects' memory output for activities completed during a target time period. Development of these instructions drew on the strategic regulation of memory model (Koriat & Goldsmith, 1996), according to which people can enhance the accuracy of their memory reports if allowed to freely decide what and how much

information to report or withhold. Specifically, Portnoy et al. (see Experiment 1) examined whether alibi instructions that differed in their emphasis on the informativeness and accuracy of information affected participants' decision regarding the informativeness and accuracy of their alibis. Prior to providing an alibi, participants were presented with one of three types of experimental pre-alibi instructions that emphasized the accuracy of information, informativeness of information, or both its accuracy and informativeness. Participants' memory output was examined in terms of two measures presented in Koriat and Goldsmith's (1996) model, namely quantity and accuracy measures. Q*uantity measures* pertain to the number of correct details reported, and *accuracy measures* pertain to the number of correct details reported out of the total number of both correct and incorrect details reported. Portnoy et al. (see Experiment 1) found that, compared to control participants who only received general alibi-provision instructions, innocent mock suspects in the combined accuracy and informativeness pre-alibi instructions condition reported the largest number of correct details (i.e., quantity), without compromising accuracy rates.

Instructing innocent suspects to report about corroborating evidence in addition to their past actions should clarify that the interviewer expects them to report about such information (see Porter et al., 2018; Leal, Vrij, Warmelink, Vernham, & Fisher, 2015; Vrij, Fisher, & Blank, 2017). However, previous research (e.g. Portnoy et al., see Experiment 1) has only guided participants to focus on the accuracy and informativeness of details without specifying corroborating evidence that could have been potentially presented by them to support their alibi. As such, neither the procedure nor the pre-alibi instructions used were designed specifically to facilitate the reporting of physical and/or person evidence. This limits the ability to conclude

that pre-alibi instructions can also enhance innocent suspects' memory output for alibi-corroborating evidence.

The Present Research

In the present research we tested the effect of administering memory-based retrieval instructions that cued accurate and informative reporting about innocent mock suspects' whereabouts and activities during the critical time period of their alibi, as well as tangible evidence that could support that alibi.

Participants were innocent mock suspects who completed several tasks outside the lab (i.e., main tasks), with each task ending with participants generating evidence that corroborated their whereabouts (i.e., evidence tasks). On their return to the lab, participants were accused of a theft that occurred while they were away and were then asked to provide an alibi across three pre-alibi instructions conditions. In the *task instructions condition*, participants were asked to report accurately and informatively about what they had done during the critical time period for their alibi. In the *enhanced instructions condition*, participants were asked to report accurately and informatively about what they had done during the critical time period for their alibi (as in the task instructions condition) *and* the evidence that could corroborate their alibi. Participants in the *control instructions condition* were only asked to report about their time away from the lab, without receiving further instructions regarding the type of information they should report about nor how accurate and informative their alibi should be. We examined the effects of the pre-alibi instructions on participants' entire alibis (i.e., reports about tasks completed and evidence generated combined) and also specifically on evidence details (i.e., details concerning the generated evidence only). Both the entire alibis and evidence details provided by participants were examined in terms of the quantity of correct details provided and accuracy rates, which are the appropriate measures to inspect when examining memory reports in general and

freely-recalled information in particular (Koriat & Goldsmith, 1996; See also Goldsmith, 2017).

We predicted that the number of correct details provided for the entire alibis would be greater in both the enhanced and task instructions conditions than in the control condition. This is because the two experimental conditions instructed participants what type of information to report about and guided them on how to provide accurate and informative information (Hypothesis 1). Additionally, we predicted that compared with the task instructions condition, the enhanced instructions would yield a higher number of correct details for the entire alibis (Hypothesis 2a) as well as for evidence details (Hypothesis 2b). This is because the addition of the evidence instructions in the enhanced instructions were predicted to cue the reporting of evidence details (See Porter et al., 2018) alongside the instructions predicted to cue the reporting of tasks completed, whereas the task instructions were predicted to cue the reporting of task details only.

With respect to accuracy rates, we predicted that these would be higher in both the enhanced and task instructions conditions than in control condition for entire alibis (Hypothesis 3a) and evidence details (Hypothesis 3b) as a result of the accuracy instructions provided in both of the experimental conditions.

Method

Design

We used a between-subjects design comprising three different pre-alibi instructions conditions: enhanced instructions, task instructions, and control instructions. Participants were randomly assigned to each experimental condition (n = 26 per condition). The dependent variables were the quantity of correct details reported and accuracy rates.

Participants

Ninety-two native English-speaking students and employees at a university in the United Kingdom took part in the study for course credit or £7. All participants also had an opportunity to enter a raffle for £50 (see Procedure). Data for 14 participants who did not follow the task instructions correctly were removed, resulting in a final sample of 78 participants (26 males and 52 females aged 18-36 years [M = 20.65, SD = 3.50 years]). To establish what effect size we might detect with reasonable power given our sample size, we conducted a post-hoc sensitivity analysis (using G*Power 3.1.9.2; see Faul, Erdfelder, Lang, & Buchner, 2007). With an alpha of .05, a power of .80, and a total sample size of N = 78, we could expect to detect a medium-to-large effect size, f = 0.36 (η^2 = .11), for a one-way ANOVA with three conditions.

Materials

Main tasks. Four tasks, based on tasks used in Portnoy et al. (see Experiment 1), were created for the study. The tasks were piloted to ensure understanding of task instructions prior to data collection. The four tasks were: finding university course information online; sorting leaflets according to colour, size, and pictures on the leaflets; writing down room numbers in a booklet; and, organizing pictures of items on an image of a display cabinet in accordance with the items' location in a real-life cabinet. The materials for the main tasks were provided to participants in an A4 package.

Evidence tasks. Four items of evidence could be generated by participants—two items of object evidence and two of person evidence. Participants were asked to generate two items of each type of evidence so that when providing their alibi, they could manipulate the accuracy and completeness of their reports about corroborating evidence. Specifically, the items of object evidence were designed to prove that

participants occupied a specific location at specific time and date when completing the relevant main task. These items were paper slips that presented the following information (depending on the date in which participants took part in the study): "You *are the 11th person to have visited room 2.37 on the 2nd floor in X Building on Friday 23/02/2018 between 9:00 and 17:00"*. One slip did not specify the time frame and instead included a blank space for participants to write the current time, and both slips included a blank space for participants to sign their name so that the slips could potentially be used to identify the participants. Each slip could be found on a pre-determined location, depending on the main task that preceded the completion of the slip. The items of person evidence were generated by tasking participants following two different main tasks with approaching a passer-by around them to ask direction to the restrooms or the departmental office; this allowed participants to describe strangers that could be approached to support the participants' presence at the location where the preceding main tasks were completed (see Burke et al., 2007; Olson & Wells, 2004). Each (object and person) evidence task always followed the same main task.

Task booklet. The first page of the booklet provided general instructions regarding tasks completion (e.g., to complete the tasks individually). Then, the instructions for each of the four main tasks appeared on a separate page, followed by the evidence task instructions on the same page. The order of the tasks was counterbalanced between participants.

Pre-alibi instructions. The instructions in both the task and enhanced instructions conditions were based on the accuracy and informativeness pre-alibi instructions used in Portnoy et al. (see Experiment 1). Specifically, participants in the task instructions condition were instructed to report accurately and informatively all

the details that they could remember about each task separately, including the sequence of actions, objects they used, and anything that happened as part of completing each task. Participants in the enhanced instructions condition were provided with the same instructions as participants in the task instructions condition, with the addition to also report accurately and informatively any evidence details that supported their alibi. They were informed that this evidence could be any object or person that could confirm that they were in a specific place at a specific time while completing the tasks. Participants in the control condition were only instructed to provide all the details that they could remember about their time away (see Appendix F for details of all pre-alibi instructions).

Post-alibi questionnaire. The post-alibi questionnaire comprised 13 open- and close- ended questions. Of most relevance are the following nine questions[2]. Participants indicated how motivated they were to provide a convincing alibi regarding the crime (1=*Not motivated at all,* 7=*Extremely motivated*) and how convincing they thought their alibi was (1=*Not convincing at all,* 7=*Extremely convincing*). Using two separate scales, participants were asked to rate how likely they thought it was that they would enter the draw for winning £50 as a result of being judged as innocent and be asked to write a second alibi as a result of being judged as guilty based their alibi (1=*Not likely at all that I will enter the draw/be asked to write another alibi,* 7=*Most likely that I will enter the draw/be asked to write another alibi*).

To gain insight into participants' strategies regarding the inclusion of evidence details in their alibi, we asked them to indicate how important it was to them to

[2] The remaining four questions were exploratory, asking participants to rate their level of motivation to complete the tasks in accordance with the instructions; rate the extent to which their alibis could be checked; indicate how much they had prepared for providing their alibi; and, indicate whether or not they thought during task completion that they would later be interviewed regarding their actions and whereabouts while away from the experimenter.

include in their alibi details that could be checked by the interviewer by choosing one of five response options (*It was important to me to provide*: *only details that can be checked*; *some details that can be checked*; *only details that cannot be checked*; *some details that cannot be checked*, and; *I did not give any thought to whether the details I have provided can be checked or not*). We additionally asked participants to freely describe the details in their alibi that could be checked. For a more general inspection of participants' thought process during alibi provision, participants were asked to freely describe the strategies they had used in order to provide their most truthful and convincing alibi regarding the crime.

Finally, we asked participants to rate on a scale of 0%-100% the truthfulness of their alibi (0=*Everything I wrote was false,* 100=*Everything I wrote was true*) and indicate what type of information they understood that we asked them to report about based on the pre-alibi instructions provided to them. Participants were asked to choose one of five response options, indicating that they understood that they were asked to report only about the (main) tasks they had completed; only the corroborating evidence; both main tasks and corroborating evidence; did not understand what information they were supposed to report about; or, "Other", with a blank space to freely explain.

Procedure

Participants were not informed of the real aim of the study nor the fact that they would be asked to provide an alibi following a mock accusation to prevent them from planning an alibi in advance. Participants completed the study individually. The experimenter explained to the participant that they would be asked to complete four separate tasks in the building where the study was taking place while wearing a body-worn camera on their chest and carrying the study package. The camera was used to

video record participants' actions and surroundings to establish the ground truth for the coding and calculation of alibi quantity and accuracy. However, to prevent exposing participants to the real aims of the study, they were explained that recording their actions was important to later ask for their personal experience during task completion. The participant then completed the four tasks (main and evidence tasks). Upon task completion, the participant returned to the lab to meet the experimenter again (time to complete all tasks based on a random sample of 10 recordings: M = 24.37, SD = 3.09 minutes).

En route to another room, the experimenter asked the participant to wait while she was "going to download the recording". On her return two minutes later, she informed the participants that the building manager had informed her that a wallet had been stolen from one of the rooms in the building, and that he had asked all experimenters to account for the whereabouts of their participants in the last hour. The participants were told that since they have been away from the lab during this time they were suspected of this theft, and that they would need to provide an alibi, describing what they were doing while completing the tasks. As a rationale for participants to rely on their alibi to convince the building manager of their innocence and not on the fact that they were wearing a camera during task completion, the experimenter told the participants that the camera failed to save the recording of them completing the tasks.

The experimenter and participants returned to the lab, where participants in all conditions were given the same general alibi instructions instructing them to provide an alibi in which they described what they were doing while completing the tasks (with no information about what specific details to report about). The experimenter informed participants that they would be typing their alibi, which would be passed on

to the building manager who would decide whether to pursue the matter further and whom they had to convince that they were innocent. Following standard procedures used to encourage participants to provide a truthful and convincing alibi (e.g., Hartwig, Granhag, & Strömwall, 2007; Vrij et al., 2009), the experimenter informed participants that if they convinced the building manager that they were innocent, their details would be entered into a prize draw for £50. However, if they failed to convince him of their innocence, they would have to provide a hand-written statement detailing their alibi instead. Finally, the experimenter explained the pre-alibi instructions, depending on the condition to which participants were allocated. Participants were then left alone for 10-minutes preparation with access to a list of the names of the tasks they had completed. Then, prior to typing their alibi for the critical time period, participants read the relevant pre-alibi instructions again. After providing their alibi, the participants completed the post-alibi questionnaire on the laptop and were debriefed and compensated for their participation in the study.

Alibi Coding

Participants' alibis were coded into Action, Object, and Settings categories (see Wright & Holliday, 2007) by the first author, who was blind to the pre-alibi instructions conditions to which the participants had been allocated. We coded only details that pertained to objects of the main and evidence tasks, as well as features of people (person evidence) that could be coded for all participants (e.g., eye colour); details such as people's jewellery (which not all people have worn) or that were not intended to be video recorded because they did not concern the tasks were not coded[3]. To determine the correctness of the details provided by participants, the first author

[3] There was not a limited number of details that could and could not be coded; the only restriction to code details was that these existed during the critical time for all participants and could be noticed and potentially reported by all participants.

compared each alibi against the recording of the participants completing the tasks and generating the evidence. If a categorised detail was described in the alibi as it appeared in the recording, it was deemed "correct". However, a categorised detail was marked "incorrect" if it was described incorrectly in the alibi or if it was described in the alibi but did not appear in the recording. Finally, four measures were calculated for each participant: quantity of correct details for the entire alibi and quantity of correct evidence details, as well as an accuracy rate for the entire alibi and an accuracy rate for evidence details. Specifically, the quantity measure for the entire alibi was calculated by totalling the number of correct details provided across all tasks (main and evidence) per each participant. The quantity measure for evidence details was calculated by totalling the number of correct details provided across all four evidence tasks per each participant. Then, the two accuracy rates for each participant were calculated by dividing the total number of correct details provided for each detail type by the total number of details provided overall (i.e., correct and incorrect) for the same detail type in that alibi.

Eight alibis (10.26%) were coded by a second coder blind to the pre-alibi instructions conditions and aims of the research. Inter-coder reliability, computed using intra-class correlation coefficient (ICC), were .96, $p < .001$ for the number of total correct details provided and .87, $p = .001$ for number of total incorrect details provided. Disagreements were discussed and resolved.

Results

Motivation Checks

Table 3.1 presents means and standard deviations of participants' responses to the motivation questions asked in the post-alibi questionnaire. Most participants were motivated to provide a convincing alibi regarding the disappearance of the wallet

(92.3%; marked 5 or higher on the 7-point response scale; *M* = 6.14, *SD* = 1.10, range: 3-7) and believed that their alibi was convincing (85.90%; marked 5 or higher on the 7-point response scale; *M* = 5.67, *SD* = 1.09, range: 2-7). One-way ANOVAs with pre-alibi instructions as the independent variable revealed no significant differences between conditions in participants' motivation to provide a convincing alibi, $F(2, 75) = 1.29$, $p = .282$, $f = 0.19$, nor in their perceptions of how convincing their alibi was, $F(2, 75) = 1.66$, $p = .197$, $f = 0.21$. Additionally, there were no significant differences between the pre-alibi conditions in participants' perceptions of the likelihood that they would enter the monetary draw, $F(2, 75) = 1.41$, $p = .251$, $f = 0.19$, nor in their perceptions of the likelihood that they would be asked to write a second alibi, $F(2, 75) = 0.26$, $p = .775$, $f = 0.08$.

Effects of Pre-Alibi Instructions on Dependent Variables

We examined the differences between the pre-alibi instructions conditions (the independent variable) in the quantity of correct details provided and accuracy rates (the dependent variables) of the information by running separate one-way ANOVAs for details pertaining to the entire alibis and evidence details separately. Means and standard deviations are presented in Table 3.2. Supplemental Materials include analyses of the number of incorrect details provided for the entire alibis as well as evidence details.

Quantity and accuracy rates of entire alibis. There was a significant difference between the pre-alibi instructions conditions for the quantity of correct details provided overall, $F(2, 75) = 4.00$, $p = .022$, $f = 0.33$. Tukey post-hoc comparisons revealed that, as predicted, participants in both the enhanced instructions condition and task instructions condition provided significantly more correct details for the entire alibis than did participants in the control condition, $p = .047$, $d = 0.72$,

Table 3.1

Means and Standard Deviations of Manipulation Checks

Measure	Alibi Instructions		
	Enhanced	Task	Control
Motivation to convince interviewer of innocence	6.00 (1.17)	6.42 (0.81)	6.00 (1.27)
Convincing alibi	5.42 (1.17)	5.96 (0.82)	5.62 (1.20)
Perceived likelihood to:			
Enter prize draw	4.54 (1.48)	4.85 (1.26)	5.15 (1.22)
Provide second alibi	3.04 (1.40)	2.81 (1.30)	2.81 (1.33)

95% CI [0.16, 1.28], and, $p = .040$, $d = 0.67$, 95% CI [0.11, 1.22], respectively. Thus, Hypothesis 1 was supported. However, in contrast to our prediction, the amount of overall correct details reported in the enhanced instructions condition did not differ significantly from that reported in the task instructions condition, $p = .998$, $d = 0.02$, 95% CI [-0.53, 0.56], failing to support Hypothesis 2a. We conducted a Bayes Factor analysis with default prior scales comparing quantity of correct details of the entire alibis between the pre-alibi instructions conditions (Wagenmakers et al., 2018). The JZS $BF_{10} = 2.36$ indicated that the obtained data were approximately 2.36 times more likely under the alternative hypothesis compared with the null hypothesis, providing anecdotal evidence (see Wagenmakers et al., 2018) in favor of the alternative hypothesis for quantity of correct details of the entire alibis.

Accuracy rates of the entire alibis did not differ significantly between the pre-alibi instructions conditions, $F(2, 75) = 0.07$, $p = .932$, $f = 0.04$. Thus, Hypothesis 3a was not supported.

Quantity and accuracy rates of evidence details. In contrast to our prediction (Hypothesis 2b), the number of correct evidence details provided did not differ significantly between the pre-alibi instructions conditions, $F(2, 75) = 1.94$, $p = .151$, $f = 0.23$. Given that this finding contrasts with our hypothesis, we ran a Bayes Factor analysis with default prior scales comparing quantity of correct evidence details between the pre-alibi instructions conditions (Wagenmakers et al., 2018). The JZS $BF_{01} = 2.02$ indicated that the obtained data were approximately 2.02 times more likely under the null hypothesis compared with the alternative hypothesis, providing anecdotal evidence (see Wagenmakers et al., 2018) in favor of the null hypotheses for quantity of correct evidence details.

The accuracy rates of details pertaining to evidence also did not differ significantly between the pre-alibi instructions conditions, $F(2, 75) = 0.14$, $p = .871$, $f = 0.06$, failing to support Hypothesis 3b.

In light of the null findings concerning accuracy rates, we ran two Bayes Factor analyses with default prior scales comparing accuracy rates of entire alibis and evidence details between the pre-alibi instructions conditions. The JZS $BF_{01} = 8.53$ for accuracy rates of entire alibis and $BF_{01} = 8.10$ for those of evidence details indicated that the obtained data were approximately 8.53 and 8.10 times (respectively) more likely under the null hypothesis compared with the alternative hypothesis, providing moderate evidence (see Wagenmakers et al., 2018) in favor of the null hypotheses for accuracy rates.

Table 3.2

Means and Standard Deviations of the Dependent Variables

	Quantity		Accuracy Rates	
Alibi Instructions	Entire Alibi *M* (*SD*)	Evidence Details *M* (*SD*)	Entire Alibi *M* (*SD*)	Evidence Details *M* (*SD*)
Enhanced	191.38 (56.10)$_a$	46.27 (15.35)$_a$	.98 (0.01)$_a$	.97 (0.03)$_a$
Task	192.46 (67.72)$_a$	43.77 (15.52)$_a$	.98 (0.01)$_a$	.97 (0.03)$_a$
Control	150.92 (56.55)$_b$	38.42 (13.00)$_a$	.98 (0.02)$_a$	.97 (0.03)$_a$
Total	178.26 (62.67)	42.82 (14.85)	.98 (0.02)	.97 (0.03)

Note. Means that do not share a common subscript within column are statistically different at $p < .05$.

Verifiability and Verbal Strategies During Alibi Provision

The majority of participants (92.31%) indicated that it was important to them to provide in their alibi *some* or *only* details that could be checked by the interviewer (see Table 3.3). Reports about participants' perception of the truthfulness of their alibi, their understanding of the type of information that we asked them to report about, the details they reported that could be checked by the interviewer, and their freely-reported strategies used to provide a convincing alibi are available in Supplemental Materials.

Table 3.3

Participants' Reports on How Important It Was to Them to Provide Details That Could Be Checked by The Interviewer

In the alibi which you have provided, how important was it to you to include details that can be checked by the interviewer?	**Alibi Instructions**		
	Enhanced	Task	Control
It was important to me to provide only details that can be checked.	10 (38.5%)	8 (30.8%)	13 (50.0%)
It was important to me to provide some details that can be checked.	13 (50.0%)	17 (65.4%)	11 (42.3%)
I did not give any thought to whether the details I have provided can be checked or not.	2 (7.7%)	1 (3.8%)	2 (7.7%)
It was important to me to provide only details that cannot be checked.	0 (0%)	0 (0%)	0 (0%)
It was important to me to provide some details that cannot be checked.	1 (3.8%)	0 (0%)	0 (0%)

Note: Numbers indicate the frequency of choosing each response option by type of pre-alibi instructions condition. Parenthesis include percentage of participants per each pre-alibi instructions condition who chose each response option.

Discussion

The present research examined the effects of memory-based reporting instructions on innocent mock suspects' memory output for their actions and whereabouts during a critical time as well as evidence that could corroborate their statement. Participants who were asked to report accurately and informatively about past actions or about past actions and alibi-corroborating evidence provided more correct details overall than did participants who were simply asked to report about their time while being away. The effect size for the main effect of the pre-alibi instructions on number of correct details of entire alibis was medium (f = 0.33; Cohen, 1988). In addition, the effect sizes of the findings that number of correct details provided was larger in both the enhanced instructions condition (d = 0.72) and task instructions condition (d = 0.67) compared with control condition were medium-to-

large and medium, respectively (Cohen, 1969). Obtaining effect sizes of these magnitudes allows us to suggest that pre-alibi instructions are effective (in this research, at least) in terms of increasing innocent suspects' memory output. However, we did not find that asking participants to report about past actions and corroborating evidence yielded a larger number of correct details overall compared with asking them to report about past actions only. Also in contrast to our prediction, there were no differences in the number of correct evidence details provided between pre-alibi instructions conditions. Given that these findings are in contrast to our prediction that the addition of the evidence instructions would further enhance participants' memory output for the critical time (though it did not compromise it), it is important to scrutinize the potential factors that may account for these findings.

The enhanced performance in terms of number of correct details provided in both experimental conditions compared with control condition may be explained by the fact that both experimental conditions instructed participants what type of information to report about. Additionally, the improved performance in the experimental conditions may also be due to the fact that these conditions guided participants on how to provide accurate and informative alibis. This finding supports the suggestion that providing suspects with memory-based reporting instructions prior to alibi provision may enhance innocent suspects' memory output for the critical time of an alleged crime. This finding also replicates Portnoy et al.'s (see Experiment 1) finding by demonstrating the increased performance in the task instructions condition (i.e., the combined accuracy and informativeness pre-alibi instructions condition in Portnoy et al.'s study[4]) in terms of the number of correct details provided compared with simply requesting participants to report about what had happened (the effect size

[4] These instructions in Portnoy et al. additionally instructed participants to report about tasks they had completed.

obtained in Portnoy et al., see Experiment 1, for the main effect of the pre-alibi instructions on quantity measure among innocent mock suspects [$f = 0.37$] was medium-to-large; Cohen, 1988). It is yet to be determined whether it was the detailing about type of information that participants were required to report about or the accuracy and informativeness instructions in the experimental conditions that yielded higher quantity measure compared with control condition in the present research. This should be examined in future research which includes both experimental conditions used in the present research while adding two separate conditions—one instructing participants only about the type of the information they should report about and one instructing them only about the accuracy and informativeness of their reports. This should also be done as an attempt to replicate the present findings.

Why did the enhanced instructions not encourage participants to report more evidence details? Work by Nahari, Vrij, and Fisher (2014b) suggests that the phrasing of such instructions may be critical. Innocent mock suspects in Nahari et al. (2014b) were asked to provide an alibi to convince an interviewer of their innocence of a crime. Critically, prior to providing their alibi, half of all participants were informed that the interviewer would check the verifiability of the details they provided (i.e., informed condition). In contrast, the second half of all participants were not informed of the interviewer's intention to check the verifiability of their alibi (i.e., uninformed condition). Nahari et al. (2014b) found that innocent mock suspects in the informed condition provided more verifiable details than did innocent mock suspects in the uniformed condition. Nahari et al. (2014b) noted that informing innocent suspects regarding the alibi evaluator's intention to examine the verifiability of their alibi can encourage them to provide more verifiable details. In the present research, we did inform all participants that the building manager would determine their guilt or innocence on the basis of their alibi; and specifically in the enhanced-instructions

condition, we instructed participants to ensure that the evidence details reported in their alibi were as informative as possible such that the building manager would be able to recognize this evidence described in their alibi (see Appendix F). However, perhaps these instructions were not sufficient to convey explicitly that the building manager would *actually* check the verifiability of their alibi. Future research should examine the effects of the enhanced instructions we used when the explicit information that the interviewer would check the verifiability of participants' alibis is added.

While the increase in the number of correct details provided in both experimental conditions for the entire alibis did not compromise the accuracy rates of participants' alibis, accuracy rates were very high across all pre-alibi instructions conditions. Although these high accuracy rates are not entirely surprising given that free reports tend to result in the reporting of accurate details (see Koriat & Goldsmith, 1994, 1996), we acknowledge that they may also be due to the short time interval between task completion and alibi provision; this short time interval may also account for the lack of differences in accuracy rates between instructions conditions for entire alibis and evidence details. Nevertheless, using a longer time delay between task completion and alibi provision would increase the likelihood of potential memory contamination which might increase error variance, consequently potentially making it harder to statistically detect effects of pre-alibi instructions (see, e.g., Frenda et al., 2011; Loftus et al., 1978; Tourangeau, 2000). Future research on the effects of pre-alibi instructions on innocent suspects' memory output should apply a longer time delay between the critical event and alibi provision.

It is worth commenting on the evidence items that participants were instructed to report about. Participants were asked to actively generate these evidence items so

that the coding of evidence details would be cohesive across all participants. However, in real life, people do not go shopping specifically to obtain a receipt or to communicate with a person who can later provide evidence; these are by-products of people's day-to-day actions. The effects of the pre-alibi instructions we used should be tested using a more authentic procedure in which evidence would be a by-product of participants' actions (e.g., a receipt from a shop as object evidence and guard in a shop as person evidence). Participants in future research may also be asked to report about their past actions and the corroborating evidence one after the other or even in separate interviews.

In conclusion, the finding concerning the larger number of correct details provided in both experimental conditions is important in demonstrating that memory-based reporting instructions can promote complete reports of innocent suspects when providing an alibi. The present findings call for further research on what and how pre-alibi instructions can enhance innocent suspects' memory output when providing an alibi as well as alibi-corroborating evidence details.

Chapter 4: Examining the effect of presuming guilt on the verbal output of innocent suspects during brief interviews

Abstract

Innocent suspects interviewed by a guilt-presumptive (vs. innocence-presumptive or neutral) interviewer may appear more nervous and defensive and may ultimately be perceived as guilty by neutral judges. We tested the impact of an interviewer displaying behaviour consistent with presuming guilt on the content of innocent mock-suspects' alibis. Participants provided an alibi to convince an interviewer of their innocence of a theft. At the outset of the interview, the interviewer implied that she believed that they were guilty or innocent, or that she had no belief about their veracity. Based on existing conflicting findings for suspects' verbal behaviour during accusatory interviews, we predicted that alibis in the guilt-belief condition would contain the highest or lowest number of correct details with overall higher or poorer accuracy rates, respectively. Although participants perceived the innocent and guilt presumptive approach of the interviewer, the number of correct details provided and accuracy rates of alibis did not differ significantly between conditions. We offer potential explanations to these findings and future lines of research.

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Introduction

In many jurisdictions, investigative interviewers should assume that the interviewee is innocent until proved guilty at trial (Naughton, 2011; Stewart, 2014). However, interviewers often form beliefs about suspects' guilt *prior* to interviewing them (Mortimer & Shepherd, 1999; Moston, Stephenson, & Williamson, 1992). For example, in an examination of 1,067 suspect interviews conducted in the United Kingdom (UK), interviewers were certain of the suspect's guilt prior to the interview for 73% (780) of the cases (Moston et al., 1992). Critically, this guilt presumption—which may be held confidently—is often held in error (Kassin, Goldstein, & Savitsky, 2003). To prevent instances of biased interviews, several interview models (e.g., the PEACE model used in the UK) include the recommendation that interviewers should avoid assumptions of guilt (Shawyer, Milne, & Bull, 2009). However, a recent survey of officers trained in the PEACE model revealed that 97.1% reported to have "sometimes" and even "always" already believed that fraud suspects were guilty prior to interviewing them (Shawyer & Milne, 2015), suggesting that the recommendation to avoid guilt presumption is not necessarily being adhered to.

Presumed Guilt and Innocent Suspects' Behaviour

Previous research has demonstrated the effects of presuming guilt both on mock interviewers' behaviour and the evaluation of interviewed mock suspects by neutral perceivers (Hill, Memon, & McGeorge, 2008; Kassin et al., 2003). Specifically, Kassin et al. (2003) found that mock interviewers who were led to expect that their suspect-participants were guilty of a theft selected from a prepared list of questions more guilt-presumptive questions compared with participants who expected to encounter an innocent suspect. New participants who listened to parts of the taped interviews judged a larger percentage of suspects interviewed by guilt-presumptive interviewers as guilty than of those interviewed by innocence-presumptive

interviewers. Suspects interviewed with a guilt-presumptive approach were also perceived as more defensive than those interviewed with an innocence-presumptive approach.

Extending Kassin et al.'s (2003) work, Hill et al. (2008) found that participants led to expect that they would interview a guilty suspect generated a higher proportion of guilt-presumptive questions to ask in the interview than did interviewers who expected to interview an innocent suspect (cf. choosing the questions from a prepared list as in Kassin et al., 2003). In a follow-up study (Hill et al., 2008), guilty and innocent mock suspects who were interviewed regarding alleged cheating with guilt-presumptive questions obtained in the first study reported feeling more pressure to confess during the interview than did mock suspects who were asked neutral questions obtained in the first study. Finally, Hill et al. (2008) found that new participants who listened to recordings of the interviews with the mock suspects rated those who were asked guilt-presumptive questions as more nervous, defensive, and guilty than those who were asked neutral questions. Critically, these listeners rated innocent mock suspects who were asked guilt-presumptive questions as more guilty than guilty mock suspects who replied to such questions.

Presumed Guilt as Part of Social Interactions

The findings of Kassin et al. (2003) and Hill et al. (2008; see also Narchet, Meissner, & Russano, 2011) suggest that guilt-presumptive interviewers unwittingly affect the behaviour of suspects such that it confirms the interviewers' guilt presumption. What processes may underlie these findings? The presumption of guilt directs the interviewer's behaviour towards a *confirmation bias* (Nickerson, 1998). Specifically, the interviewer unintentionally gathers and uses information in a selective manner (e.g., selects/formulates guilt-presumptive questions) such that it

increases the validity of her/his guilt belief. Then, it is possible that a *self-fulfilling prophecy* interaction sequence takes place (Merton, 1948; see also Darley & Fazio, 1980; Mortimer & Shepherd, 1999; Nickerson, 1998). In this sequence, the interviewer (i.e., the perceiver) forms the guilt belief about the suspect (i.e., the target), behaves towards the suspect in accordance with this belief, and this may change the suspect's behaviour such that it complies with the interviewer's guilt belief. The fact that the mock-suspects' behaviour during the guilt-biased interviews in Kassin et al. (2003) and Hill et al. (2008) was perceived by neutral observers (who knew nothing about the interviewer's guilt-presumption manipulation) provided a *behavioural confirmation* of the interviewers' belief.

The Present Research

Regardless of the guilt/innocence presumption with which interviewers approach suspect interviews, innocent suspects sometimes fail to provide convincing alibis due to the reporting of incomplete and/or inaccurate details (Olson & Charman, 2012; Olson & Wells, 2004, 2012). During a crime investigation, innocent suspects whose alibi turns out to be erroneous or incomplete may be perceived as liars (Burke, Turtle, & Olson, 2007; Dysart & Strange, 2012; Olson & Charman, 2012), and, ultimately, are at increased risk of being falsely convicted (Crozier, Strange, & Loftus, 2017; Wells et al., 1998). Thus, unintentionally providing inaccurate alibis can be very risky for innocent suspects. Kassin et al. (2003) and Hill et al. (2008) demonstrated the effects of interviewers' presumed guilt on suspects' non-verbal behaviour during interviews in terms of increased defensiveness and nervousness. However, the effect of presumed guilt on suspects' *verbal* behaviour has not been examined—an important research avenue given that police interviewers may be the first to ask suspects to provide an alibi (Burke et al., 2007) and that interviewers' presumed guilt can affect innocent suspects' behaviour during interviews in ways which neutral

observers consider indicative of guilt. Thus, in the present research, we examined whether an interviewer's presumed guilt affected the completeness and accuracy of alibis of innocent suspects.

Specifically, we examined the quantity and accuracy rates of participants' alibis. According to Koriat and Goldsmith's (1996) model of strategic regulation of memory accuracy, *quantity measures* pertain to the number of correct details that can be remembered, and *accuracy measures* concern the number of correct details that can be correctly remembered out of the total number of details provided (correct and incorrect). Analysing the quantity and accuracy rates of details provided is the most appropriate approach to examine memory reports in general, and freely-recalled information in particular (Koriat & Goldsmith, 1996; see also Goldsmith, 2017).

After completing a number of tasks, participants provided an alibi in order to convince an interviewer of their innocence of an alleged theft. Critically, at the outset of the interview, the interviewer implied to participants that she believed that they were guilty or innocent of the theft, or that she had no specific belief regarding their responsibility for the theft. We manipulated the behaviour of the interviewer to already be in accordance with a guilt/innocence belief (cf. leading mock interviewers to believe that they are about to interview a guilty/innocent suspect as in Hill et al., 2008, and Kassin et al., 2003) because we were only interested in the effects of a guilt presumption on mock suspects' reaction (i.e., the final phase of a self-fulfilling prophecy sequence). In addition, although in Hill et al. (2008) the mock suspects were asked questions that were generated by guilt-primed naïve participants, the interviews with these mock suspects were conducted by a confederate over a telephone. In the present research, in contrast, although the interviewers' words and behaviour were scripted, these interviews took place in person. This allowed the interviewer to

communicate her belief to participants through her words and tone of voice, and also her facial expressions.

We identified and tested two possible predictions pertaining to the number of correct details and accuracy rates of participants' alibis. On the one hand, Granhag, Clemens, and Strömwall (2009) have demonstrated that statements of guilty mock suspects interviewed under high levels of suspicion were more informative than were statements of guilty mock suspects interviewed under low levels of suspicion, presumably because the former mock suspects felt that they had to "work hard" to convince the interviewer of their innocence. Accordingly, we predicted that after perceiving the treatment of the guilt-presumptive interviewer as a result of a self-fulfilling prophecy sequence, the alibis of participants in the guilty-belief condition (the equivalent to high-level suspicion in Granhag et al., 2009) would include the largest number of correct details (i.e., highest quantity measure of correct details; Koriat & Goldsmith, 1996). The alibis of participants in the innocent-belief condition, in contrast, would include the smallest number of correct details. For the same rationale of feeling that the burden of convincing the interviewer of their innocence is on their shoulders, we additionally predicted that the guilty-belief participants would also "work hard" to provide accurate information and thus the accuracy rates of their alibis would be the highest whereas accuracy rates of alibis in the innocent-belief condition would be the lowest.

On the other hand, Vrij, Mann, Kristen, and Fisher (2007) have shown that when interviewed with accusatory interview styles, guilty and innocent mock suspects provided the shortest statements, perhaps because accusatory interviews cause suspects to be less forthcoming. Thus, it was also considered possible that presumed-guilt participants would provide the smallest number of correct details with poorer

accuracy rates while alibis of participants in the innocent-belief condition would include the largest number of correct details and be the most accurate.

Method

Design

We used a between-subjects design with two conditions in which suspect-interviewees were led to believe that the interviewer believed they were guilty (guilty-belief condition [n = 30]) or innocent (innocent-belief condition [n = 30]) of a theft. Interviewees in a third condition were treated in a neutral manner by the interviewer (neutral-belief condition [n = 30]). Participants were randomly assigned to one of these three experimental conditions. The dependent variables were the quantity (of correct details) and accuracy rates of the information provided in interviewees' alibis.

Participants

Ninety-nine native English-speaking students and employees at a British university completed the study. Participants were compensated with course credit or 5 GBP, with an opportunity to win 20 GBP if their alibi was judged as truthful (all participants were entered in this draw). Data for nine participants were removed from analyses because these participants did not complete the tasks correctly or because the interviewer did not administer the instructions correctly. Thus, data from the remaining ninety participants were included in the final analyses (15 males,75 females, aged 18-39 years [M = 20.84, SD = 3.71 years]). We performed a post-hoc sensitivity analysis (using G*Power 3.1.9.2; see Faul, Erdfelder, Lang, & Buchner, 2007) to determine the effect size we might detect with reasonable power given our sample size. With an alpha of .05, a power of .80, and a total sample size of N = 90, we could expect to detect a medium effect size, f = 0.33 (η^2 = .10), for a one-way ANOVA with three conditions.

Materials

Tasks. The critical event comprised four office-type tasks. During task completion, participants performed various actions around the task room involving different objects: finding information online and writing it up on a whiteboard; matching name-tags with photos according to a written description; sorting two sets of memo cards according to colour and size; and, choosing dates for birthdays and marking them on a calendar. Participants received the instructions for the tasks in a booklet in which the first page included general instructions regarding the completion of the tasks (e.g., to complete each task one at a time), followed by the instructions for each task on a separate page. The order of the tasks was counterbalanced.

Interviewer-belief scripts. A script for each interviewer-belief condition (guilty, innocent, and neutral) was developed and piloted prior to commencing the study. The scripts used in each interviewer-belief condition can be found in the Appendix G.

Post-alibi questionnaire. The post-alibi questionnaire contained 19 questions. First, participants were asked to rate the truthfulness of their alibi (0 = *Everything I said was false,* 100 = *Everything I said was true*). Participants also rated their motivation to appear convincing while providing their alibi (1 = *Not motivated at all*, 7 = *Extremely motivated*). As a manipulation check, participants rated how the interviewer had treated them before they provided their alibi (1 = *The interviewer treated me as if I was completely innocent*, 7 = *The interviewer treated me as if I was completely guilty*). To gain insight into participants' perceptions of the effects of the interviewer on their alibis, participants rated the extent to which they thought that the behaviour and words of the interviewer affected separately (i) the informativeness (ii) and accuracy of their alibi (1 = *No effect at all on my decision to be*

informative/accurate [respectively], 7 = *Completely affected my decision to be informative/ accurate* [respectively]).

Next, participants rated separately how important it was to them to provide details that were as informative as possible and as accurate as possible (1 = *Not important at all*, 7 = *Extremely important*). Participants were also asked to describe the strategies they used to provide a convincing alibi. Then, participants rated how convincing they thought their alibi was (1 = *Not convincing at all*, 7 = *Extremely convincing*). Finally, using two separate scales, participants rated the likelihood that they would enter the draw for winning 20 GBP as a result of being judged as innocent based on their alibi and be asked to handwrite a second alibi as a result of being judged as guilty based on their alibi (1 = *Not likely at all that I will enter the draw/be asked to handwrite another alibi* [respectively], 7 = *Most likely that I will enter the draw/be asked to handwrite another alibi* [respectively])[5]. We used the term "informativeness" and not "quantity of correct details" throughout the post-alibi questionnaire to prevent participants from confusing the meaning of quantity measure with that of accuracy.

Procedure

Tasks completion and accusation. Participants, who completed the study individually, were not informed of the real aim of the study to prevent them from

[5] The remaining eight questions, which were used for exploratory purposes, asked participants to describe their experience during the meeting with the interviewer; rate their motivation to complete the tasks in line with the instructions; rate their level of preparation for alibi provision; note whether they thought during task completion that they would be interviewed regarding their presence in the task room; describe what aspects of their alibi may convince the interviewer that they were innocent/guilty of the theft; rate the extent to which they thought that the details they provided could be checked, and; rate how important it was to them to provide verifiable details.

planning an alibi in advance. After receiving the task booklet from the experimenter, participants completed the four tasks one at a time in the task room without a time limit while being surreptitiously filmed to provide ground truth for later calculation of quantity and accuracy measures. In the task room, a wallet was placed on the keyboard of a laptop which participants had to use during three tasks, and thus they had to move the wallet (which made them aware of its presence in the room). Once all tasks were completed, participants exited the task room and followed the experimenter to another room (i.e., the interview room). The time taken to complete all four tasks was, on average, 26 mins, *SD* = 5.20. En route, the experimenter stopped and asked participants to wait while she "checked something". On her return after one minute, the participants were informed that another researcher had reported a wallet stolen from the task room and that they were now suspected of this theft. They were told that they would be asked to provide an alibi to account for the time they were in the room and that this alibi should cover what they were doing in the room while completing the tasks. Drawing on Hill et al.'s (2008) procedure, the accusation and interview took place immediately following the critical event (i.e., task completion).

Alibi provision. In the interview room, the experimenter explained to participants that in their alibi they should report truthfully all the details that they remembered about each task that they had just completed in the task room, including the sequence of actions, objects they had used, and anything that had happened as part of completing each task. They were informed that they would first be given 10 minutes to prepare their alibi, during which they would be left with a list of the names of the tasks that they had completed. The experimenter explained to the participants that if they succeeded in convincing the interviewer of their innocence, they would enter a prize draw in the chance to win 20 GBP. However, if they failed to do so, they would have to provide a second, handwritten alibi (see, e.g., Hartwig et al., 2007; Vrij

et al., 2009 for use of similar incentives). Finally, the experimenter told participants that the interviewer would see them now, and then left the interview room.

The interviewer (i.e., another experimenter) entered the interview room and sat in front of the participants. Depending on the interviewer-belief condition to which participants were allocated, she conveyed to the participants her belief regarding their alleged responsibility for the theft of the wallet from the task room. In the guilty-belief condition, the interviewer told participants that it was a problem that they were in this situation and that their alibi *would need to be a good one* to convince her that they did not steal the wallet. In the innocent-belief condition, the interviewer apologised to participants that they had to be in this situation and assured them that they just needed to provide their alibi *to confirm* that it could not have been them who have stolen the wallet. In the neutral-belief condition, the interviewer told participants that this was a standard situation and they needed to provide their alibi *to explain* why it could not have been them who have stolen the wallet. Then, the interviewer exited the room and gave participants 10 minutes to prepare their alibi.

After preparation time, the interviewer re-entered the room and explained to participants that she would not communicate with them until they finished providing their statement. Just before the participants started to provide their alibi, the interviewer reiterated her belief to participants regarding their responsibility for the alleged theft: In the guilty-belief condition, she told them that *she was not convinced that they would succeed in convincing her* that they did not steal the wallet, whereas in the innocent-belief condition she told them that *she was sure they would succeed in convincing her* that they did not steal it. In the neutral-belief condition, she told them that *they may or may not convince her* that they did not steal the wallet. In addition to the words she used, the interviewer also behaved towards participants in a manner that

reflected her belief regarding their alleged responsibility for the theft of the wallet. Specifically, she maintained a stern facial expression and used a severe tone of voice when speaking to participants in the guilty-belief condition. In the innocent-belief condition, she appeared and sounded apologetic; and in the neutral-belief condition, she maintained a neutral expression and tone. Four experimenters conducted the interviews across all conditions to ensure that any effects of interviewer's belief could not be attributed to specific characteristics of the person communicating this belief. The first author trained the other three experimenters to administer the belief manipulations for all three conditions. One-way ANOVAs revealed that neither the number of correct details provided nor the accuracy rates of alibis differed between the interviewers, $F(3, 78) = 0.95$, $p = .419$, $f = 0.18$, and $F(3, 78) = 0.38$, $p = .771$, $f = 0.13$, respectively. Also, no significant interaction effects of the interviewer who administrated the interview and interviewer-belief conditions were found for both number of correct details provided, $F(6, 78) = 1.71$, $p = .131$, $f = 0.35$, and accuracy rates of alibis, $F(6, 78) = 0.87$, $p = .523$, $f = 0.26$.

The participants then provided their alibi, reporting about the four tasks that they had completed. All interviews were audio-recorded and the interviewer typed the alibi statement as the interviewees provided it. Finally, participants completed the post-alibi questionnaire, were debriefed, and compensated for their participation.

Alibi Coding

The alibis were coded into Action, Object, and Settings categories (see Wright & Holliday, 2007) by the first author, who was blind to the interviewer-belief conditions to which the participants were assigned. To determine the correctness of the details provided, each alibi was then compared against the video clips of the participants completing the tasks. If a detail was described in the alibi in the same way

as it appeared in the video clip, it was coded as "correct". If a detail was described in the alibi incorrectly, or if it was described in the alibi but did not appear in the video clip, it was coded as "incorrect". Finally, for each alibi (i.e., participant), we calculated a quantity measure by totalling the number of correct details provided across all tasks. Additionally, an accuracy rate was calculated for each participant by dividing the total number of correct details provided by the participant by the total number of correct and incorrect details provided by the participant across all tasks.

A second coder, blind to the interviewer-belief conditions to which participants were assigned, coded nine alibis (10%). Inter-coder reliability, computed using intra-class correlation coefficient (ICC), were .98, $p < .001$ for the quantity measure and .86, $p < .001$ for the accuracy rate.

Results

Motivation and Manipulation Checks

Table 4.1 presents means and standard deviations of participants' responses to the rating questions of the post-alibi questionnaire. The majority of participants (81.1%) indicated that their alibi was completely truthful (i.e., marked 95 or higher on the response scale; $M = 97.27$, $SD = 4.97$, range: 73-100). Additionally, most participants (88.9%) were motivated to appear convincing while providing their alibi (i.e., marked 5 or higher on the response scale; $M = 5.99$, $SD = 1.24$, range: 1-7). One-way ANOVAs revealed that participants' ratings of the truthfulness of their alibis and their motivation to appear convincing while providing their alibi did not differ significantly between the interviewer-belief conditions, $F(2, 87) = 0.55$, $p = .581$, $f = 0.11$, and, $F(2, 87) = 0.96$, $p = .387$, $f = 0.15$, respectively. Thus, participants complied with instructions to provide truthful alibis and were motivated to convince the interviewer of their innocence.

Next, as a manipulation check, we conducted a one-way ANOVA with interviewer's belief as the independent variable and participants' ratings of how the interviewer had treated them before they provided their alibi as the dependent variable. We found that these ratings (see Table 4.1) differed significantly between the interviewer-belief conditions, $F(2, 87) = 23.79$, $p < .001$, $f = 0.74$. Post-hoc Tukey tests indicated that these ratings of participants in the innocent-belief condition were significantly lower (i.e., more towards feeling that the interviewer had treated them as if they were completely innocent) than those of participants in both the neutral-belief condition, $p < .001$, $d = 1.09$, 95% CI [0.55, 1.64], and guilty-belief condition, $p < .001$, $d = 1.75$, 95% CI [1.15, 2.34]. However, although the ratings of participants in the guilty-belief condition were higher (i.e., more towards feeling that the interviewer had treated them as if they were completely guilty) than those of participants in the neutral-belief condition, this difference was not significant according to the post-hoc tests, $p = .052$, $d = 0.65$, 95% CI [0.13, 1.17]. Nevertheless, this manipulation check confirms that participants in the guilty-belief condition perceived that the interviewer had treated them as if she believed they were guilty of the theft, and that participants in the innocent-belief condition perceived that the interviewer had treated them as if she believed they were innocent of the theft before they provided their alibi.

Table 4.1

Means and Standard Deviations of Participants' Responses to Motivation and Manipulation Questions in the Post-Alibi Questionnaire

	Interviewer's belief		
Measure	**Guilty**	**Innocent**	**Neutral**
Self-reported truthfulness	97.00 (4.69)	98.03 (3.48)	96.77 (6.39)
Motivation to convince interviewer of innocence	6.23 (0.94)	5.93 (1.29)	5.80 (1.45)
Perceived interviewer's belief	4.87 (1.14)	2.67 (1.37)	4.10 (1.24)
Perceived interviewer's influence on:			
Informativeness	4.00 (2.32)	4.37 (1.83**)**	3.70 (1.66)
Accuracy	3.43 (2.14)	3.53 (1.85)	3.47 (1.59)
Self-reported importance to be:			
Informative	6.70 (0.60)	6.43 (0.97)	6.43 (0.94)
Accurate	6.80 (0.48)	6.50 (0.73)	6.47 (1.01)
Convincing alibi	5.50 (0.97)	5.87 (1.20)	4.90 (1.27)
Perceived likelihood to:			
Enter prize draw	3.93 (1.48)	4.80 (1.42)	3.83 (1.51)
Provide second alibi	3.37 (1.22)	2.90 (1.37)	3.83 (1.37)

Effects of Interviewer's Belief on Quantity and Accuracy Rates

To examine the effects of the interviewer's belief regarding participants' responsibility for the alleged theft on participants' alibis, we conducted two one-way ANOVAs with interviewer's belief as the independent variable and quantity (of correct details) and accuracy rates as dependent variables. Means and standard deviations are presented in Table 4.2. In contrast to our predictions, and despite the results of the manipulation check, the number of correct details provided did not differ

significantly between the interviewer-belief conditions, $F(2, 87) = 1.20$, $p = .306$, $f = 0.17$. Also in contrast to our predictions, the accuracy rates of the information provided by participants did not differ significantly between interviewer-belief conditions, $F(2, 87) = 0.32$, $p = .729$, $f = 0.08$.

Table 4.2

Means and Standard Deviations of the Dependent Variables

	Quantity		**Accuracy Rates**	
Interviewer's Belief	*M*	*SD*	*M*	*SD*
Guilty	238.67	108.50	.96	0.03
Innocent	214.23	104.81	.96	0.03
Neutral	201.57	62.73	.97	0.03
Total	218.16	94.54	.96	0.03

Given these null results, we ran two Bayes Factor analyses with default prior scales comparing quantity and accuracy rates between the different interviewer-belief conditions. The JZS $BF_{01} = 3.90$ for quantity and $BF_{01} = 7.82$ for accuracy rates indicated that the obtained data were approximately 3.90 and 7.82 (respectively) times more likely under the null hypothesis compared with the alternative hypothesis. This provides moderate evidence (Wagenmakers et al., 2018) in favor of the null hypotheses for quantity and accuracy.

Perceptions During Interaction with The Interviewer

We conducted two one-way ANOVAs with interviewer's belief as the independent variable and participants' ratings of the extent to which they thought the behaviour and words of the interviewer affected the informativeness and the accuracy of their alibi as the dependent variables. Participants' ratings (see Table 4.1) of the extent to which they thought the interviewer affected the informativeness and the

accuracy of their alibi did not differ significantly between the interviewer-belief conditions, $F(2, 87) = 0.87$, $p = .421$, $f = 0.14$, and, $F(2, 87) = 0.02$, $p = .978$, $f = 0.02$, respectively.

Perceptions and Verbal Strategies During Alibi Provision

One-way ANOVAs with interviewer's belief as the independent variable revealed no differences in participants' ratings of how important it was to them to provide details that were as informative as possible (see Table 4.1), $F(2, 87) = 0.98$, $p = .379$, $f = 0.15$, and how important it was to them to provide details that were as accurate as possible without guessing, $F(2, 87) = 1.70$, $p = .189$, $f = 0.20$.

The strategies participants reported using to provide a convincing alibi were categorised in a data-driven manner (i.e., the categories of strategies were derived from the strategies themselves). These strategies are presented in Table 4.3, focusing on strategies pertaining to the informativeness and accuracy of the information provided. The majority of participants (70%) reported that it was important to them to provide an informative alibi to convince the interviewer that they were occupied with completing the tasks and hence could not had stolen the wallet. A chi-square test of independence reveled that the relation between interviewer-belief condition and participants' tendency to report the informative-alibi strategy was not significant, $X^2 (2, N = 90) = 0.95$, $p = .621$. This strategy was also the most common one reported by participants within each condition of interviewer's belief.

As for the accuracy of details, a chi-square test of independence reveled that the relation between interviewer-belief condition and participants' tendency to report that it was important to them to provide an accurate alibi and avoid guessing was also not significant, $X^2 (2, N = 90) = 2.31$, $p = .315$.

Table 4.3

Participants Self-Reported Verbal Strategies Used to Appear Truthful and Convincing During Alibi Provision

Describe the strategy or strategies you used in order to appear as truthful and convincing as possible while you were providing your alibi regarding the disappearance of the wallet	**Interviewer's Belief**		
	Guilty	Innocent	Neutral
Provide as many details as possible; provide specific details	20 (66.7%)	23 (76.7%)	20 (66.7%)
Be accurate; avoid guessing and/or making-up details; inform the interviewer if unsure about details provided	6 (20%)	2 (6.7%)	4 (13.3%)
Not to provide too many details (e.g., so to not contradict oneself)	1 (3.3%)	1 (3.3%)	0 (0%)
Guess details	1 (3.3%)	0 (0%)	0 (0%)

Note: Numbers indicate frequency of reporting each strategy by type of interviewer-belief condition. Parenthesis present percentage of participants per interviewer-belief condition who reported each strategy. Each "suspect" could report a strategy more than once and from more than one category.

A one-way ANOVA with interviewer's belief as independent variable revealed a significant difference in participants' ratings of how convincing they thought their alibi was (see Table 4.1), $F(2, 87) = 5.37$, $p = .006$, $f = 0.35$. Post-hoc Tukey tests showed that ratings in the innocent-belief condition were significantly higher than those in the neutral-belief condition, $p = .005$, $d = 0.79$, 95% CI [0.26, 1.31], meaning that the former perceived their alibi as more convincing than did the latter. However, no significant differences in these ratings were found between the guilty-belief condition and both the innocent-belief condition, $p = .438$, $d = 0.34$, 95% CI [-0.17, 0.85], and neutral-belief condition, $p = .115$, $d = 0.53$, 95% CI [0.02, 1.05].

Finally, a one-way ANOVA with interviewer's belief as independent variable revealed that participants' estimations of the likelihood that they would enter the prize draw differed significantly between the interviewer-belief conditions (see Table 4.1), $F(2, 87) = 3.91$, $p = .024$, $f = 0.30$. Post-hoc Tukey tests showed that the draw-

likelihood estimations were significantly higher in the innocent-belief condition than in the neutral-belief condition, $p = .034$, $d = 0.66$, 95% CI [0.14, 1.18]. However, these estimations did not differ significantly between participants in the guilty-belief condition and in both the innocent-belief condition, $p = .064$, $d = 0.60$, 95% CI [0.08, 1.12], and neutral-belief condition, $p = .963$, $d = 0.07$, 95% CI [-0.44, 0.57]. Participants' estimations of the likelihood that they would be asked to handwrite a second alibi also differed significantly between the interviewer-belief conditions, $F(2, 87) = 3.74$, $p = .028$, $f = 0.29$. Post-hoc Tukey tests showed that the second-alibi likelihood estimations were significantly lower in the innocent-belief condition than in the neutral-belief condition, $p = .020$, $d = 0.68$, 95% CI [0.16, 1.20]. However, these estimations did not differ significantly between participants in the guilty-belief condition and in both the innocent-belief condition, $p = .362$, $d = 0.36$, 95% CI [-0.15, 0.87], and neutral-belief condition, $p = .362$, $d = 0.35$, 95% CI [-0.16, 0.86].

Discussion

In light of previous findings demonstrating the effects of an interviewer implying their belief about the likely guilt of an interviewee on the non-verbal behaviour of innocent suspects during interviews (e.g., Hill et al., 2008; Kassin et al., 2003), we examined whether presumed guilt affected innocent suspects' verbal behaviour during interviews in terms of the quantity of correct details provided and accuracy of their alibis. Our manipulation was successful to the extent that participants in the guilty-belief and innocent-belief conditions perceived that, before they provided their alibi, the interviewer believed they were guilty and innocent (respectively) of the theft. However, we did not observe significant differences between the interviewer-belief conditions in terms of the quantity of correct details and accuracy rates of the alibis provided. Given these null results, it is important to explore the factors that might account for these findings.

Previous research suggests that behavioural-confirmation effects are larger when targets believe that they may interact with the perceiver again (Haugen & Snyder, as cited in Snyder & Stukas, 1999). It may be that if participants in the guilty-belief condition thought that they would interact with the interviewer again, they would have provided an alibi that would confirm the interviewer's guilty belief. Nonetheless, only a single interviewer-interviewee interaction took place also in the Kassin et al. (2003) and Hill et al. (2008) studies, both of which reported effects of presumed guilt on interviewees' behaviour. One important difference between their studies and the present one may lie in the nature of the interaction between interviewer and interviewee. Interactions in these previous studies involved back-and-forth questioning which generated more opportunities for the interviewers to communicate their guilty belief to the participants, reinforce the presumption of guilt and, potentially, ratchet up the pressure on the interviewee. In contrast, as we were interested in the effects of interviewer's presumption of guilt on the alibi statement provided (cf. responses to continuous questioning), the interviewer conveyed her belief to the participants before they provided their alibi only (which was nevertheless sufficient for participants in the guilty- and innocent-belief conditions to perceive the biased treatment of the interviewer). Future research might examine the effects of an interviewer's presumed guilt on alibi provision across several interactions, as well as on different types of statements (e.g., a single alibi statement and answers to a set of questions).

Despite the null findings, it may be that the participants in the guilty-belief condition did behave in response to the interviewer's guilt-led behaviour. It has been suggested that when the perceiver's opinion matters to the target and when the perceiver's impression of the target is inaccurate in the eyes of the target, the target will act to prove the perceiver wrong (e.g., Darley & Fazio, 1980; Snyder & Stuaks,

1999). Given participants' high levels of self-reported motivation to appear convincingly innocent, it appears that the interviewer's opinion mattered to all participants. Moreover, knowing that they were undoubtedly innocent of the theft, participants in the guilty-belief condition likely disagreed with the interviewer's impression of them (i.e., her guilty belief). Consequently, to prove the interviewer 'wrong', these participants opted to provide relatively detailed and informative alibis comprising a large number of correct details. Alternatively, as was suggested by Granhag et al. (2009) with respect to their participants in the high-suspicion level condition, participants in the guilty-belief condition in the present research may have felt that it was their responsibility to convince the interviewer that they were innocent.

However, a difference between the low-suspicion condition in Granhag et al. (2009) and the innocent-belief condition in the present research may account for null findings in the present research. In Granhag et al. (2009), participants in the low-suspicion condition did not feel that being informative would benefit them as did participants in the high-suspicion condition, resulting in difference in the informativeness of statements between suspicion-level conditions. In contrast, in the present research, participants in the innocent-belief condition presumably felt that an informative statement could convey their innocence (see Hartwig et al., 2007; Kassin & Norwick, 2004; Vrij et al., 2010). Consequently, their statements were as informative as were those of participants in the guilty-belief condition, resulting in no difference in the number of correct details provided between the interviewer-belief conditions.

With respect to the accuracy rates obtained in participants' alibis, these are high across all conditions. This is not entirely surprising, given that free reporting tends to produce reports comprised of accurate information (see Koriat & Goldsmith, 1994,

1996). However, another possibility is that the short time interval between task completion and alibi provision (in accordance with previous methodologies, e.g., Hill et al., 2008) may account for the high accuracy rates observed (and, consequently, for the lack of difference between conditions in accuracy rates). As memory decays over time, innocent suspects may find it difficult to recall an accurate version of past events, potentially making them more susceptible to the behaviour of a guilt-presumptive interviewer. Thus, future research on the effects of interviewer's presumed guilt on the alibis of truthful suspects may employ a longer delay between the critical event and the interview.

It is worth commenting on the perceptions of participants in the neutral-belief condition, where responses to the manipulation question ("*Before you provided your alibi, how did the interviewer [i.e., to whom you provided your alibi] treat you?*") were significantly different from those in the innocent-belief condition but not from those in the guilty-belief condition. According to Snyder and Stukas (1999), when a perceiver acts towards the target in accordance with a neutral expectation, this "might give targets about whom nothing is known the benefit of the doubt" (p. 291), and the perceiver's behaviour is likely to be perceived by the target as conveying more of a positive expectation. However, it may be that once people are being asked to account for their whereabouts in attempts to exonerate themselves as part of a police interview, their only perception of the interviewer's belief about their veracity is that s/he thinks they are guilty, even if the interviewer treats them in a neutral (but not innocent) manner. For participants in the neutral-belief condition, not receiving cues that the interviewer believed they were innocent, combined with being suspected of a crime, may have led them to feel fully responsible to convince the interviewer of their innocence (i.e., like guilty suspects). Thus, their responses to the manipulation question resembled those of participants in the guilty-belief condition. Kassin et al.

(2003) and Hill et al. (2008) asked their participants about their experience during the meeting with the interviewer only with respect to participants' perception of how hard the interviewer was trying to obtain a confession from them or how the interviewer would judge them following the interview. However, this is different from asking participants *how they felt that the interviewer had treated them*, which, in the context of research on effects of interviewers' presumption of guilt, was done for the first time (to our knowledge) only in this study. Thus, to further establish the personal experience of meeting a neutral versus guilt-presumptive interviewer, future research on the effects of interviewers' presumption of guilt on suspects' verbal (and nonverbal) behaviour should ask participants about their perception of the interviewer's belief as was perceived by them *prior to* or *during* the interview.

A couple of other limitations are associated with the current research. Participants' potential 'punishment' for failing to convince the interviewer of their innocence was clearly not as severe as those potentially faced by innocent suspects in real-life interviews. Future research on the effects of interviewer's presumed guilt on innocent suspects' verbal behaviour should manipulate the severity of the outcomes presented to participants of their success and failure to convince the interviewer of their innocence. Additionally, in common with previous research (e.g., Olson & Charman, 2012), and given that being mistakenly believed to be guilty is more detrimental to innocent suspects, the present research included only innocent mock suspects. However, future research should examine the strategies of guilty-suspects under similar circumstances.

From an applied perspective, the present findings suggest that when it comes to their *verbal* behaviour, innocent suspects may remain informative despite a single guilt-presumptive treatment from the interviewer. They may appear defensive (Hill et

al., 2008; Kassin et al., 2003), but that is not to say that the information they provide is always more likely to be incorrect and/or incomplete. Nevertheless, it would be a mistake to conclude that when interviewers approach the interview with the belief that the suspect is guilty, this presumption will cause no harm to innocent suspects. It is important to consider that once suspects respond to the interviewer's question/provide their alibi, the interviewer interprets this response. Even if the target did not respond in accordance with the perceiver's expectation, the perceiver is unlikely to change her/his belief about the target and may instead maintain the mistaken belief by attributing the target's opposite reaction to situational rather than dispositional factors (see, e.g., Darley & Fazio, 1980). It may be that, during an investigation, a guilt-presumptive interviewer learns that a (innocent) suspect was correctly informative during a recent interview, but may fail to attribute this verbal behaviour to the suspect's actual innocence. Consequently, the interviewer may continue to believe that this suspect is guilty and may thus continue to interview this suspect in manners coloured by this belief. Future research could examine whether a disconfirming verbal behaviour on the part of the suspect changes or maintains a guilt-presumptive interviewer's initial belief.

Even with the short interaction used in the present research, participants perceived the guilt- and innocence-led behaviour of the interviewer. Thus, the present findings demonstrate the importance of examining the effects of an interviewer's guilt presumption on innocent suspects' alibis even during such short interactions. Such examinations, and any examinations of effects of guilt presumptions on innocent suspects' behaviour, are needed as long as there continue to be cases in which police interviewers approach interviews with suspects when already believing they are guilty, even when trained to avoid such behaviour.

Chapter 5: Beliefs about innocent suspects' alibis: A survey of lay people in the United Kingdom, Israel, and Sweden

Abstract

When interviewed by a police officer, innocent suspects may fail to provide a convincing alibi for a number of reasons, including impaired memory processes and/or guilt-presumptive behaviour on behalf of the interviewer. Consequently, an innocent suspect may be prosecuted and tried in court, where jury members will inevitably asses the credibility of his or her original alibi. Using a questionnaire administrated across the United Kingdom (n = 96), Israel (n = 124), and Sweden (n = 123), the present research examined the beliefs lay people (as prospective jurors) hold regarding alibis, and, specifically, the issues of impaired memory processes and interviewers' presumption of guilt in the context of innocent suspects' alibis. The findings suggest that participants did not tend to believe that alibis of innocent suspects may include inaccurate details. However, most participants did note that, when innocent suspects provide inaccurate alibis, this may be due to memory constraints. Additionally, most participants believed that interviewers usually begin to form a belief about suspects' guilt or innocence before or while suspects are providing their alibi for the first time, and that a guilt presumption can affect how interviewers conduct interviews with suspects. We discuss the findings in relation to relevant research.

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Introduction

Innocent suspects who fail to provide a convincing alibi when interviewed by the police may subsequently be tried in court, where their alibi may be evaluated again by lay people who serve jury duty. Are lay people familiar with factors that may lead to an innocent suspect providing an inaccurate, incomplete or otherwise unconvincing alibi? Using a survey, the current research sought to examine this question.

Providing a Convincing Alibi

When providing an alibi to a police interviewer, suspects generally attempt to convince the interviewer of their innocence of the crime for which they are being held suspects. This process has been identified as the *generation domain* of alibi provision (Burke, Turtle, & Olson, 2007; Olson & Charman, 2012; Olson & Wells, 2004) which comprises two phases—the story phase and the validation phase. During the first, story phase, suspects provide their alibi by reporting from memory about their actions and whereabouts during the time of the crime. In the subsequent validation phase, suspects attempt to corroborate their alibi by offering objects (physical evidence) or details about people (person evidence) that may account for their presence in a certain place and a certain time during the time frame of the crime (Burke et al., 2007).

However, during both phases of the generation domain, innocent suspects may provide inaccurate information despite being motivated to provide an accurate and, ultimately, convincing alibi (see Kassam, Gilbert, Swencionis, & Wilson, 2009). One factor that has been found to hamper innocent suspects' ability to provide accurate information is impaired memory processes—a result of the fact that they (as all truthful rememberers) must rely on their episodic and autobiographical memory to provide their statement (Burke et al., 2007; Culhane, Hosch, & Kehn, 2008; Olson & Wells, 2012; Strange, Dysart, & Loftus, 2014). Impaired memory processes concern, for example, the declining accessibility of event details with the passage of time

(Pertzov, Manohar, & Husain, 2017; Tourangeau, 2000). Alternatively, innocent suspects may wrongly, though unintentionally, integrate details from memories for distinctive events into a report about an event that never actually took place (i.e., memory-conjunction error; Reinitz, Lammers, & Cochran, 1992; see also Devitt, Monk-Fromont, Schacter & Addis, 2016).

In addition to memory problems that may compromise innocent suspects' ability to provide a convincing alibi, factors emerging in the course of the interview may also jeopardise their success with respect to convincing the interviewer of their innocence. One such factor is the presumption of guilt with which interviewers sometimes approach interviews with suspects. Research has shown that this guilt presumption can lead interviewers to conduct more aggressive interviews with suspects and increases the probability that the interviewer will judge the suspect as guilty at the end of the interview (Hill, Memon, & McGeorge, 2008; Kassin, Goldstein, & Savitsky, 2003). Research on the effects of interviewers' presumption of guilt on the verbal behaviour of suspects during interviews is relatively new. Findings so far have shown no correlation between interviewers' guilt presumption and suspects' tendency to confess or deny involvement in a crime (Hill et al., 2008), and found no evidence that guilt presumption affects the informativeness and accuracy of innocent suspects' alibis (Portnoy et al., see Experiment 3). Nevertheless, the findings of Kassin et al. (2003) and Hill et al. (2008) suggest that when interviewers approach the interview already believing the suspect to be guilty, alibis may become less efficient in suspects' attempts to convince interviewers of their innocence.

Evaluating the Credibility of Alibis

The generation domain of alibi provision is followed by the *believability domain* (Burke et al., 2007; Olson & Charman, 2012; Olson & Wells, 2004). This domain also

comprises two phases—the evaluation phase and the ultimate evaluation phase. In the evaluation phase, the credibility of the alibi provided is evaluated, usually initially by the police. Finally, the ultimate credibility of the alibi is determined in court by different evaluators, who are exposed to all the facts of the case. When investigating an alibi and discovering that the suspect provided incorrect information, the police interviewer may fail to attribute such inaccuracies to memory errors (Burke et al., 2007; Dysart & Strange, 2012; Olson & Wells, 2012). Instead, unintentional inaccuracies in alibis may be perceived by the police as an intentional lying and hence guilt (Burke et al., 2007; Dysart & Strange, 2012; Olson & Charman, 2012). Alternatively, as noted, a guilt presumption alone may be enough for an interviewer to decide that the suspect is guilty. If suspects are judged as guilty during initial phases of an investigation, this may ultimately lead to the decision that they should be tried in court (Crozier, Strange, & Loftus, 2017; Wells et al., 1998).

In court, jury members may be the most influential evaluators of a suspect's alibi. The task of the jury is challenging, requiring citizens to consider different sources of information to reach a verdict despite lacking legal training (Bornstein & Greene, 2011; Greene & Bornstein, 2000). To reach a verdict, jurors must assess the credibility of the suspect, namely whether s/he is innocent or guilty of a crime (Porter & ten Brinke, 2009). When evaluating the credibility of an alibi, jurors may fail to consider factors that may have led to the suspect providing an unconceding alibi, such as memory errors or a biased interviewer.

However, jurors may have a sound rationale not to question the circumstances that led to the suspect being disbelieved and consequently tried in court. As noted by Burke et al. (2007), "the mere fact that the alibi provider has been singled out and asked for an alibi is in itself potentially damaging information about that person" (p.

168; see also Sommers & Douglass, 2007). Also, the fact that the case made it to court may be sufficient to doubt the alibi—a suggestion tested by Sommers and Douglass (2007). In their study, across several conditions, the researchers manipulated the framing of a report (e.g., title of the report) which provided participants with information about the investigation of a vandalism crime and an alibi of a suspect. The two framing conditions of most relevance to the present research are those in which participants were manipulated to believe that the report they read was (i) a police investigation summary or (ii) a criminal trial summary. Participants rated the alibi as stronger and more credible in the police investigation condition than in the criminal trial condition. Sommers and Douglass (2007) noted that participants in the criminal trial condition possibly interpreted the fact that the case had gone to trial as an indication that the suspect's alibi was weak.

When suspects confess to a crime and this confession is then presented at trial, an effort is often made by defence attorneys and expert witnesses to explain the conditions that may have led to the confession in order to ensure that jurors can better decide whether the confession is reliable (Shaked-Schroer, Costanzo, & Berger 2015). However, the conditions under which an alibi was provided may not be explained to the jury. During the course of the trial, jurors may assume that there was a justifiable reason to prosecute the suspect, and this assumption is likely to guide them in deciding that an innocent suspect is guilty (Burke et al., 2007). Thus, it is crucial that jurors are informed and educated about the process of alibi provision and the factors that may jeopardize this process.

The Present Research

A first step in improving jurors' decision making in court to prevent miscarriages of justice is studying what lay people who may potentially constitute a

jury know about legal matters. Such examination is also required because judges largely base their decision of whether to allow expert witnesses to testify at trial on their assumptions about jurors' knowledge regarding legal matters (Costanzo, Shaked-Schroer, & Vinson, 2010).

To examine the extent to which lay people as prospective jurors are familiar with the factors of impaired memory processes and interviewers' presumption of guilt in the context of alibi provision, we asked lay people from the United Kingdom (UK) to complete a two-part questionnaire. To increase our sample size and thus improve the precision and power of our statistical analyses, and to improve the diversity of our sample, we also distributed the questionnaire to community members in Sweden and Israel. While the latter two countries do not employ a jury system[6], data from these countries are still informative with regard to our research question: lay beliefs and perceptions about alibis.

In the first part of the questionnaire we studied participants' knowledge about innocent suspects' alibi provision in general. This examination was necessary because credibility judgments are partly influenced by evaluators' perceptions and beliefs about honest and deceptive behaviour (Porter & ten Brinke, 2009). To this end, participants indicated their beliefs about the extent to which different types of details are provided in suspect alibis, as well as the strategies used by suspects to provide an alibi. We also asked participants about their belief regarding the relation between an alibi's truthfulness and its level of informativeness, and the extent to which innocent suspects might provide inaccurate information. Critically, to study whether participants considered impaired memory processes as potential reasons for

[6] In Israel, verdicts are reached by the judge who then also makes the sentencing decisions (Barak, 1992). In Sweden, a mixed panel of professional judges and lay judges decides on both verdicts and sentencing outcomes (Ortwein, 2003).

incompleteness and inaccuracies in innocent suspects' alibis, participants were asked to explain their responses to these questions.

The second part of the questionnaire focused on the issue of interviewers' presumption of guilt. To explore whether lay people consider it likely that interviewers conduct suspect interviews under a presumption of guilt, participants were asked to estimate when in the investigation interviewers begin to form an opinion about the suspect's guilt or innocence. This question was followed by a more direct question about presumptions of guilt, which asked participants to indicate the extent to which they believed that an interviewer's presumption of guilt may affect the interviewer's words and behaviour during the interview. Finally, participants indicated their belief about the potential effects of the interviewer's guilt presumption on the behaviour of suspects during interviews. Having no rationale to predict differences in responses between participants by country, we collapsed results across the three countries.

Method

Participants

Overall, data was collected from 343 members of the general public from three countries. Specifically, 96 participants from the UK, 124 participants from Israel, and 123 participants from Sweden completed the questionnaire. Data from 11 participants were removed from analyses because they did not complete the questionnaire thoroughly (e.g., provided a one-word reply to all open-ended questions in a manner unrelated to the questions) or failed to meet inclusion criteria (i.e., over the age of 18 years, without previous experience of providing a police alibi). This resulted in data from 332 participants (M = 29.85 years; SD = 11.33; 210 females, 108 males; 14 participants did not indicate their age and gender). Participants were recruited via

advertisements on social media. All participants who completed the survey were entered into a prize draw for a £20 internet shopping voucher.

Alibi Questionnaire

A questionnaire comprising eight questions was created in English (see Appendix H). The questionnaire was translated into both Hebrew and Swedish by native speakers of both languages using a back-translation procedure. The three language versions of the questionnaire were administrated online using the Qualtrics platform.

When opening the link to the questionnaire, participants were informed that the questionnaire concerned beliefs that members of the general public hold about alibis. Participants completed informed consent procedures and were required to confirm that they had never provided an alibi as part of a police investigation. At the outset of the questionnaire, participants were presented with definitions of the following terms: an alibi, truthful suspects, and lying suspects (see Appendix H). Participants were then instructed to work through the eight questions, with each question presented on a new screen.

In the first part of the questionnaire, participants were first asked to indicate, for six types of details, the extent to which they thought each type of detail was provided in deceptive relative to truthful suspects' alibis using a 7-point Likert scale (1=*substantially more in liars' alibis than in truth-tellers' alibis,* 7=*substantially more in truth-tellers' alibis than in liars' alibis*). These six types of details were setting (i.e., description of the crime scene and/or any other places described in the alibi); temporal (i.e., description of the order in which events took place and/or the specific times and dates in which events occurred); object (i.e., details about objects used by the suspect and/or by others described in the alibi); person description (i.e., details about the

appearance of other people described in the alibi); self-actions (i.e., details about actions taken by the suspect); and, others' actions (i.e. details about actions taken by people described in the alibi that are not the suspect).

Next, participants were asked to freely describe what strategies they thought truthful and lying suspects typically use to make their alibi seem credible. Participants were then asked what they believed the relation between the amount of details provided in an alibi and the truthfulness of the alibi to be by choosing one of three response option indicating that more details in an alibi increase or decrease the likelihood that it is truthful, or that there is no relation between an alibi's level of detail and its truthfulness. Participants were also asked to explain their belief. Finally, participants were asked to indicate and explain their belief regarding the extent to which truthful alibis might contain incorrect details (1=*truthful alibis contain no incorrect details*, 7=*truthful alibis contain only incorrect details*).

In the second section of the survey which concerned the factor of interviewers' guilt presumption, participants were first asked to indicate the point in the course of the investigation in which they believed interviewers begin to form an opinion regarding the guilt or innocence of suspects. To indicate their belief, participants were asked to choose one of five response options (e.g., *usually prior to hearing the suspect's alibi for the first time*) or freely report their belief if the options presented were not satisfactory. Participants were then asked to indicate the extent to which they thought an interviewer's guilt presumption affects what the interviewer says and how s/he behaves during an interview (1=*does not at all affect the interviewer's words and behaviours*, 7=*significantly affects the interviewer's words and behaviour*). Finally, we asked participants about the likelihood that suspects respond to the interviewer's guilt presumption by (a) providing more details in their alibi, (b) providing details

even if uncertain of their accuracy, and, (c) confessing to committing the crime (1=*very unlikely*, 7=*very likely*).

On completion of the questionnaire, participants were asked to report their age, gender, country of residence, and the main language they use in every day communications. Finally, participants were debriefed and thanked for their participation.

Results

Innocent Suspects' Alibi Provision and Effects of Memory Processes

Table 5.1 presents means and standard deviations of participants' responses to the question concerning the extent to which setting, temporal, object, person, self-actions, and others' actions details are provided in alibis of truthful suspects relative to lying suspects. On average, participants believed that most types of details are provided significantly slightly more in truthful than in deceptive alibis.

Table 5.1

Participants' Belief Regarding the Extent to Which Types of Details Are Provided in Suspect Alibis

The extent to which each type of detail is provided in alibis of lying suspects or/and truth-telling suspects *(1 = substantially more in liars' alibis, 7 = substantially more in truth-tellers' alibis)*	***M* (*SD*)**	***t** (*p* value)**	***d*, 95% CI**
Person description	4.40 (1.52)	4.78 (< .001)	0.26, [0.15, 0.37]
Temporal	4.38 (1.63)	4.20 (< .001)	0.23, [0.12, 0.34]
Object	4.37 (1.45)	4.69 (< .001)	0.26, [0.15, 0.37]
Setting	4.34 (1.72)	3.63 (< .001)	0.20, [0.09, 0.31]
Others' actions	4.10 (1.52)	1.23 (= .221)	0.07, [-0.04, 0.18]
Self-actions	4.00 (1.65)	0 (= 1.000)	0.0, [0, 0]

Note. * = All *df* = 331.

Next, we categorised the freely-reported strategies that participants thought truthful and lying suspects typically use to make their alibi seem truthful and convincing to the interviewer. The first author coded all responses in a data-driven manner, meaning that the categories were derived from participants' reports. A second coder coded 32 responses (9.8%) of participants for each of the two strategies questions (liars and truth tellers). Tables 5.2 and 5.3 present the categories of the strategies perceived by participants to be used by truthful and lying suspects, respectively. The tables also present inter-coder reliability computed using intra-class correlation coefficient (ICC). The three most common strategies of truthful suspects during alibi provision reported by participants (Table 5.2) were that truth tellers cooperate with the interviewer, express confidence, and provide detailed alibis. With respect to liars' strategies during alibi provision (Table 5.3), the three most commonly reported strategies concerned providing detailed alibis, engaging in general impression management, and expressing confidence.

As two of the three most commonly reported strategies were strategies reported for both truthful and lying suspects (i.e., providing detailed alibis and expressing confidence), we examined whether the proportion to which participants reported each of these strategies differed for truthful and lying suspects. Two exact McNemar's tests were conducted only among participants whose reports could be coded for both truthful and lying suspects' strategy questions (n = 321). The tests showed that participants believed that a detailed alibi occurs more often with respect to lying (39.0%) than truthful suspects (26.6%), p = .001. In contrast, participants believed that expressing confidence occurs more often among truthful (30.0%) than lying suspects (16.6%), p < .001.

Table 5.2

Strategies Used by Innocent Suspects to Provide a Convincing Alibi as Freely Reported by Participants

Strategy	Frequency (% of total N)	ICC (p-value)
Non-verbal behaviour and impression management		
Suspect expresses calmness/confidence and is confident in innocence	98 (30.0)	0.94 (< .001)
Suspect engages in general impression management to appear and sound innocent	50 (15.3)	0.79 (< .001)
Open, calm (sometimes expressive) movements and voice	35 (10.7)	0.84 (< .001)
Suspect is naturally nervous, fidgety	34 (10.4)	1.00 (< .001)
Suspect keeps eye contact with interviewer	31 (9.5)	1.00 (< .001)
Suspect is cooperative and does not use strategies	108 (33.0)	0.94 (< .001)
Informativeness, accuracy, and evidence details		
Suspect provides detailed alibis	87 (26.6)	1.00 (< .001)
Suspect is informative about self-actions, whereabouts, and feelings during the critical time	37 (11.3)	1.00 (< .001)
Suspect is not too informative	34 (10.4)	1.00 (< .001)
Suspect is informative about surroundings and objects	28 (8.6)	1.00 (< .001)
Suspect provides person/object evidence details	61 (18.7)	1.00 (< .001)
Suspect provides accurate information	54 (16.5)	1.00 (< .001)
Statement's characteristics		
Suspect describes events chronologically; provides exact times	36 (11.0)	1.00 (< .001)
Suspect's statement is coherent, logical	34 (10.4)	1.00 (< .001)
Suspect's statement is consistent	24 (7.3)	1.00 (< .001)
Other	79 (24.2)	0.80 (< .001)

Note. N = 327; Data from five participants were removed from analysis because their reports were too vague. "Other" = strategies that were individually reported by less than 5.5% of participants (e.g., truthful suspects repeat their story; report incorrect information; and, do not describe events chronologically). Participants could report a strategy more than once and from more than one category).

Table 5.3

Strategies Used by Guilty Suspects to Provide a Convincing Alibi as Freely Reported by Participants

Strategy	Frequency (% of total N)	ICC (p-value)
Non-verbal behaviour and impression management		
Suspect expresses calmness/confidence	54 (16.6)	1.00 (< .001)
Suspect engages in general impression management to appear and sound innocent; denies guilt	84 (25.8)	1.00 (< .001)
Open, calm (sometimes expressive) movements and voice (naturally or faked)	28 (8.6)	1.00 (< .001)
Suspect is naturally nervous, fidgety	41 (12.6)	1.00 (< .001)
Suspect keeps eye contact with interviewer	25 (7.7)	1.00 (< .001)
Suspect prepares an alibi; memorises details	53 (16.2)	1.00 (< .001)
Suspect makes up details	26 (8.0)	1.00 (< .001)
Suspect appeals to interviewer's feelings	25 (7.7)	1.00 (< .001)
Informativeness, accuracy, and evidence details		
Suspect provides detailed alibis	127 (39.0)	.88 (< .001)
Suspect is informative about self-actions, whereabouts, and feelings during the critical time	18 (5.5)	.79 (< .001)
Suspect is not too informative	46 (14.1)	1.00 (< .001)
Suspect is informative about surroundings and objects	23 (7.1)	-*
Statement's characteristics		
Suspect describes events chronologically; provides exact times	33 (10.1)	1.00 (< .001)
Suspect's statement is coherent, logical (naturally or with effort)	36 (11.0)	1.00 (< .001)
Suspect's statement is vague, not coherent (naturally or on purpose)	22 (6.7)	1.00 (< .001)
Other	127 (39.0)	1.00 (< .001)

Note: $N = 326$; Data from six participants were removed from analysis due to being vague. "Other" = strategies that were individually reported by 4.9% of participants, or less (e.g., liars provide verifiable/ unverifiable information; feign forgetting/not knowing details; name another person as the culprit; and, do not speak). Participants could report a strategy more than once and from more than one category. * = inter-coder reliability cannot be computed because of lack of variance in item coding between coders (i.e., perfect agreement).

Table 5.4 presents the frequencies with which participants chose each response option to the question concerning the relation between the amount of details provided in an alibi and its truthfulness. A chi-square test of goodness-of-fit revealed that the preference for the three response options was not equally distributed, X^2 (2, N = 332) = 8.32, p = .015. Post-hoc analyses of standardized (Pearson) residuals showed that the belief that more details indicate a less truthful alibi was reported more often than would be expected by chance, p = .021. However, this test just barely failed to reach statistical significance when compared against the Bonferroni-corrected alpha (α = .05/3 = .017). None of the other two response options approached statistical significance, ps ≥ .112.

Also presented in Table 5.4 are participants' reasons for their belief regarding the relation between the amount of details provided in an alibi and its truthfulness. Most participants who believed that a detailed alibi is *less likely* to be truthful explained their belief by reporting that liars may believe that a detailed alibi is perceived as truthful and convincing. With respect to participants who believed that a detailed alibi is *more likely* to be truthful, most of them explained their belief by reporting that the truth is easy to keep track of and thus being informative is not difficult. Finally, most participants who believed that the amount of details provided in an alibi is *not related* to its truthfulness reported that the truthfulness of an alibi depends on different factors, such as the verifiability of the details provided, how central the details are to the main event, and the suspect's personal strategy to appear truthful (which may or may not be to provide many details).

Table 5.4

Participants' Belief About the Relation Between Amount of Details Provided in an Alibi and Its Truthfulness and Their Explanations for Their Beliefs

	The relation between amount of details provided in an alibi and its truthfulness		
Explanation	The more details provided in the alibi, the less likely the alibi is truthful 135* (40.7%)	The more details provided in the alibi, the more likely the alibi is truthful 94 (28.3%)	The amount of details provided in the alibi is not related to its truthfulness 103 (31.0%)
Liars believe that a detailed alibi is perceived as truthful	80** (59.3%)	0 (0.0%)	20 (19.4%)
The truth is easy to keep track of; many details can corroborate the suspect's story	2 (1.5%)	43 (45.7%)	7 (6.8%)
Depends on different factors	3 (2.2%)	3 (3.2%)	57 (55.4%)
Truth tellers have memory for the critical time	0 (0.0%)	40 (42.6%)	10 (9.7%)
Truth tellers do not remember everything	52 (38.5%)	0 (0.0%)	26 (25.2%)
A detailed alibi seems planned	49 (36.3%)	0 (0.0%)	11 (10.7%)
Few details lower the risk of providing incriminating information	2 (1.5%)	33 (35.1%)	4 (3.9%)

Note. * = number of participants from total sample (N = 332) who chose this response option (brackets include percentage of participants who chose this response option out of the total sample). ** = frequency of participants who provided this explanation out of total number of participants who chose the response option (brackets include percentage of participants who provided this explanation out of the total number of participants who chose the response option). Participants could provide an explanation of more than one type.

We then examined participants' belief regarding the extent to which truthful alibis might contain incorrect details. On average, participants believed to a relatively low extent that truthful alibis might contain incorrect details (M = 3.41, SD = 1.15). Participants' beliefs about the accuracy of truthful alibis and the reasons underpinning

these beliefs (as reported by participants who chose response option 2 or higher) are presented in Table 5.5. Most participants explained that truthful alibis may contain incorrect details due to impaired memory processes.

Table 5.5

Participants' Explanations for Their Belief About the Extent to Which Truthful Alibis May Contain Incorrect Details

Explanation	**The extent to which truthful alibis might contain incorrect details** (1=*truthful alibis contain no incorrect details*, 7=*truthful alibis contain only incorrect details*)					
	1	**2**	**3**	**4**	**5**	**6**
	9 (2.7%)	67* (20.2%)	113 (34.0%)	75 (22.6%)	59 (17.8%)	9 (2.7%)
Impaired memory processes		52** (77.6%)	103 (91.2%)	66 (88.0%)	51 (86.4%)	6 (66.7%)
Pressure/excitement from being interviewed		27 (40.3%)	40 (35.4%)	23 (30.7%)	18 (30.5%)	3 (33.3%)
On purpose (e.g., to end the interview; to cover for another truth)		15 (22.4%)	12 (10.6%)	6 (8.0%)	5 (8.5%)	2 (22.2%)
Confusion		11 (16.4%)	8 (7.1%)	4 (5.3%)	4 (6.8%)	0 (0.0%)
Other		2 (3.0%)	0 (0.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)

Note. Label 7 is not included because no participant chose this response option. * = number of participants from total sample (N = 332) who chose this response option (brackets include percentage of participants who chose this response option out of the total sample). ** = frequency of participants who provided this explanation out of total number of participants who chose the response option (brackets include percentage of participants who provided this explanation out of the total number of participants who chose the response option). "Other" = explanations that truthful alibis might contain incorrect information so that the alibi will not be perfect; due difficulty to communicate thoughts because of culture or language; and, because suspects do not put an effort because they are innocent. Participants could provide an explanation of more than one type.

Interviewers' Presumption of Guilt

The point of the investigation at which participants believed an interviewer likely begins to form an opinion about the guilt/innocence of the suspect is presented

in Table 5.6. A chi-square test of goodness-of-fit revealed that participants' preference of the six possible response options was not equally distributed, X^2 (5, N = 332) = 170.37, $p < .001$. Post-hoc tests of standardized (Pearson) residuals, using a Bonferroni-corrected alpha ($\alpha = .05/6 = 0.008$), indicated that participants tended to believe significantly more often than would be expected by chance that interviewers usually begin to form an opinion regarding the guilt/innocence of suspects *prior* to hearing their alibi for the first time ($p < .001$) or *while* suspects are providing their alibi for the first time ($p < .001$). The post-hoc tests also indicated that the beliefs that interviewers *never* form a belief regarding suspects' involvement in a crime and that there may be another option for the timing of the formation of this belief ("other" response option) were both significantly underrepresented, both ps < .001. The remaining two response options were not statistically significant, ps ≥ .074.

Table 5.6

Participants' Belief About the Point in the Investigation at Which the Interviewer Begins to Form an Opinion Regarding the Guilt/Innocence of the Suspect

Response Option	Frequency (% of total N)
Usually while the suspect is providing the alibi for the first time	118 (35.5%)
Usually prior to hearing the suspect's alibi for the first time	93 (28.0%)
Usually after there is evidence to corroborate/refute the alibi	56 (16.9%)
Usually after interviewing the suspect several times	42 (12.7%)
Other	17 (5.1%)
The interviewer never forms a belief regarding the suspect's involvement in the crime	6 (1.8%)

Note. N = 332. "Other" category included reports that the point in the investigation at which the interviewer begins to form an opinion regarding the guilt/innocence of the suspect varies from one interviewer to another, that it depends on factors such as the suspects' behaviour, and that it may be a combination of several of the response options provided.

Then, we found that, on average (M = 5.61, SD = 1.23), participants believed that interviewers' guilt presumption can largely affect what interviewers say and how they behave during an interview. The explanations underpinning these beliefs are presented in Table 5.7. The most common explanation provided by participants who strongly believed this to be true (i.e., chose 5 or higher on the response scale) was that guilt presumptions make interviewers conduct harsher interviews, ask leading questions, and pressure the suspect to confess.

Finally, on average, participants believed to a large extent that when suspects get the impression that the interviewer thinks they are guilty, they will provide more details in their alibi (M = 5.47, SD = 1.45) and provide details even if they are uncertain of their accuracy (M = 5.27, SD = 1.33). However, they believed that the extent to which suspects will confess to committing the crime is low (M = 2.98, SD = 1.45).

Table 5.7

Participants' Explanation for Their Belief About the Extent to Which Interviewer's Presumed Guilt Might Affect What This Interviewer Says and How S/He Behaves During This Interview

Explanation	**The extent to which interviewer's presumed guilt might affect what this interviewer says and how s/he behaves during this interview** (1=*does not at all affect the interviewer's words and behaviours, 7=significantly affects the interviewer's words and behaviour*)					
	2	**3**	**4**	**5**	**6**	**7**
	7* (2.1%)	13 (3.9%)	33 (9.9%)	94 (28.3%)	88 (26.5%)	97 (29.2%)
The interviewer will conduct harsher interviews	1** (14.3%)	4 (30.8%)	6 (18.2%)	50 (53.2%)	55 (62.5%)	44 (45.4%)
General reports that bias affects the interviewer's behaviour without explaining how	3 (42.9%)	7 (53.8%)	10 (30.3%)	26 (27.7%)	19 (21.6%)	33 (34.0%)
The interviewer will focus on and/or interpret suspects' alibi and/or behaviour in accordance with the belief and/or ignore contradicting information	2 (28.6%)	0 (0.0%)	6 (18.2%)	22 (23.4%)	17 (19.3%)	24 (24.7%)
Depends on different factors (e.g., the interviewer; existing evidence)	0 (0.0%)	0 (0.0%)	11 (33.3%)	3 (3.2%)	1 (1.1%)	2 (2.1%)
Interviewers are trained to avoid biased interviews and will not communicate the suspicion to the suspect	2 (28.6%)	5 (38.5%)	9 (27.3%)	9 (9.6%)	2 (2.3%)	0 (0.0%)
Report is about effects on suspect, not the interviewer	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (2.3%)	6 (6.2%)

Note. Label 1 is not included because no participant chose this response option. * = number of participants from total sample (N = 332) who chose this response option (brackets include percentage of participants who chose this response option out of the total sample). ** = frequency of participants who provided this explanation out of total number of participants who chose the response option (brackets include percentage of participants who provided this explanation out of the total number of participants who chose the response option). Participants could provide an explanation of more than one type.

Discussion

Using a questionnaire administrated in three countries, the present research examined lay people's beliefs about factors that may hinder innocent suspects' ability to provide convincing alibis. In general, participants' responses indicated that they did not believe that innocent suspects may provide inaccurate alibis, but that when this happens, impaired memory processes are likely to be the reason. With respect to the factor of interviewers' presumption of guilt, participants mostly believed that interviewers usually begin to form an opinion regarding the veracity of suspects before or while suspects are providing their alibi for the first time. Also, participants tended to believe that a presumption of guilt can affect how interviewers conduct an interview with suspects. Finally, while participants tended to believe that a presumption of guilt would make suspects provide more details even if they are uncertain about their accuracy, they did not tend to believe that a guilt presumption would make suspects confess to the crime. Below we discuss these findings in depth and review how they fit with existing research.

Innocent Suspects' Alibi Provision and Impaired Memory Processes

The most noteworthy finding concerning participants' beliefs about the qualities of suspect alibis was that participants believed that while innocent suspects are more informative with respect to specific details, guilty suspects more often try to be informative in general. Specifically, participants tended to believe that, on average, setting, temporal, object, and person-description details are provided only slightly more in alibis of innocent suspects than guilty suspects. Research has shown that, compared with statements of guilty suspects, statements of innocent suspects do contain more temporal and setting details, as well as details concerning people and objects (Vrij, 2008a; see also DePaulo et al., 2003). However, when participants freely reported that suspects provide a generally detailed alibi to appear convincing, this was

reported more often with respect to guilty suspects than innocent suspects. Most participants also believed that the more details provided in the alibi, the less likely it is to be truthful. This belief contrasts with existing findings, according to which innocent suspects' statements are more informative than those of guilty suspects (e.g. DePaulo et al., 2003; Vrij, 2008a), and innocent suspects tend more than guilty ones to employ an alibi-provision strategy of providing a detailed statement (Hartwig, Granhag, & Strömwall, 2007; Hartwig, Granhag, Strömwall, & Doering, 2010; Strömwall, Hartwig, & Granhag, 2006). Why would participants think that liars prefer to provide many details to appear truthful and that they may even succeed in doing so? It may be that participants believed that with the use of two strategies they mentioned—making up details and preparing an alibi—liars can make their lie "work". However, although participants mentioned that a lie is difficult to keep up with, they may not fully realise how difficult it is, and that even when planning a lie, it is easier for liars to keep their deceptive statement short (Strömwall et al., 2006; Vrij, Granhag, & Porter, 2010).

Participants' responses indicated that they were reluctant to acknowledge that innocent suspects' alibis may unintentionally include incorrect details. However, when examining the explanations of participants as to why they believed that innocent suspects' alibis may contain inaccurate details, a more encouraging picture emerged. Specifically, participants acknowledged that memory processes may fail innocent suspects when attempting to report accurately from memory. Participants correctly (see Burke et al., 2007; Tourangeau, 2000) acknowledged that innocent suspects may not encode relevant event details because of not realising the importance of remembering the event for a later reporting. Participants also mentioned that event details may be forgotten over time (see Pertzov et al., 2017; Tourangeau, 2000), and that innocent suspects may provide inaccurate details as a result of interviewing techniques (see Loftus, Miller, & Burns, 1978; see Frenda, Nichols & Loftus, 2011 for

a review). Similar explanations were provided by participants when explaining why they believed that a detailed alibi may indicate that the suspect is guilty (that is, because memory failures may prevent innocent suspects from being informative).

Altogether, findings from the first part of the survey suggest that participants generally failed to acknowledge that innocent suspects may unintentionally provide inaccurate alibis. Nevertheless, participants did demonstrate an understanding that innocent suspects may provide inaccurate details due to impaired memory processes.

Beliefs about Interviewers' Presumption of Guilt

Participants' belief that interviewers' guilt presumption may lead them to conduct harsher interviews, use leading questions, and pressure the suspect to confess aligns with findings of existing research (e.g., Hill et al., 2008; Kassin et al., 2003). This finding suggests that lay people may not disregard suspects' claim that the interviewer to whom they provided their alibi had treated them in accordance with a guilt belief before they provided their alibi. Although we did not examine differences in responses by country, it is worth mentioning Sweden as an exception in the matter of presumption of guilt in the legal system. In accordance with the Swedish Code of Judicial Procedure, police officers in Sweden must inform suspects at the outset of the interview of the degree of suspicion (see Granhag, Clemens, & Strömwall, 2009). This procedure is different from the *implicit* communication of guilt presumption that we asked participants for their beliefs about. Future research may specifically examine beliefs of the Swedish public about the effects of the formal practice of informing suspects of level of suspicion versus effects of more subjective, implicit presumption of guilt on innocent suspects' alibis.

Participants additionally tended to believe that when suspects feel that they are being interviewed by a guilt-presumptive interviewer, they would be more

forthcoming and not confess to a crime. On the one hand, existing research has not found evidence of effects of interviewers' guilt presumption on the completeness and accuracy of alibis of innocent suspects (Portnoy et al., see Experiment 3). On the other hand, findings demonstrated lack of correlation between guilt presumption and suspects' tendency to confess to committing a crime or deny involvement in a crime (Hill et al., 2008). Thus, participants' beliefs about suspects' reaction to a guilt-presumptive interviewer partly align with existing research.

Altogether, results from the second part of the survey suggest that participants realised that interviewers may form a belief about suspects' guilt prior to hearing their alibi for the first time and that this belief may affect how interviews conduct suspect interviews. As a more general future line of research, it may be interesting to compare beliefs of police interviewers with those of members of the general public about the topics of memory limitations and presumption of guilt in the context of innocent suspects' alibis.

Implications, Limitations and Future Directions

The present findings suggest that when evaluating the credibility of suspect alibis, prospective jurors may acknowledge that alibis are sometimes provided in a harmful environment. However, the factors examined in the present research may not be the first factors to come to their mind when evaluating alibis, especially not the factor of impaired memory processes in the context of innocent suspects' alibis. Accordingly, for the sake of innocent suspects who fail to provide a convincing alibi, judges must not prevent memory and interview experts from discussing relevant research findings in court on the grounds that "such research would tell jurors little that they did not already know" (Kassam et al., 2009, p. 552).

Such implications are relevant only for countries whereby verdicts are reached by jurors. Nonetheless, the present findings are also relevant to any country whereby information gathering from suspects is necessary, as these findings can inform the development of interviewing techniques. For example, assuming that participants' beliefs about the behaviour of suspects reflect how they would behave as suspects during police interviews (as was also suggested by some responses), the finding that they believed that a detailed statement is more likely to be deceptive suggests that, as truth-tellers during interviews, they would not try to provide a detailed statement. Accordingly, when interviewing suspects and instructing them to provide a detailed statement, it may be crucial to also explain to them the importance of being informative, for example, for the course of the investigation and the possibility of exonerating them as suspects by having more details to verify.

Several limitations are associated with the present research. Firstly, although our findings demonstrate what lay people *believe* and *know* about the factors of memory failures and guilt presumption in the context of alibis, we did not ask participants whether they would *consider* these factors when evaluating alibis' credibility. Future research may focus on this specific question. Secondly, it may be that the response options for some questions limited the range of responses, even though participants were provided with free space throughout and at the end of the questionnaire to express any thoughts they may have had. Future similar questionnaires may include additional response options to those used in the present research while allowing participants to freely express their beliefs.

The present research was the first to examine the extent to which lay members of the public are familiar with factors that may hamper suspects' ability to provide a convincing alibi, ultimately leading to innocent suspects being tried in court.

Alongside developing interviewing techniques that would maximise innocent suspects' alibi provision, further research should be devoted to examining the extent to which (prospective) jury members are informed of the potentially harmful atmosphere in which suspects provide their initial alibi.

Chapter 6: General Discussion

The aim of the current programme of work was to contribute to the neglected yet growing body of research on alibi provision by innocent suspects by exploring how this process of provision of alibis may be improved for both innocent suspects as well as police interviewers. The present research explored the effects of memory-based reporting instructions on the memory output of innocent suspects when providing an alibi to convince police interviewers of their innocence as well as when reporting about alibi-corroborating evidence. In addition, the present thesis examined the effects of one aspect of suspect interviewing that may hamper innocent suspects' memory output during alibi provision, namely an interviewer's presumption of guilt. Specifically, in three experimental studies and one exploratory survey, I examined the effects of pre-alibi instructions on memory output by innocent mock suspects providing an alibi about their past actions (Chapter 2: Experiment 1) as well as evidence that may corroborate their alibi (Chapter 3: Experiment 2). Next, I examined how a presumption of guilt communicated to innocent mock suspects affected their memory output during alibi provision (Chapter 4: Experiment 3). Finally, I examined the beliefs and knowledge of members of the general public regarding alibi generation and provision by suspects, memory failures as a reason for inaccuracies in innocent suspects' alibis, and the issue of interviewers' presumption of guilt (Chapter 5: Survey). In the General Discussion chapter, I summarise and discuss the key findings in terms of theoretical and practical implications, and examine the contribution of the findings with respect to the wider literature. In addition, I discuss the limitations of the present thesis and suggest routes for further research.

Summary of Findings

In Experiment 1 (Chapter 2), the effects of memory-based pre-alibi instructions on innocent mock suspects' memory output when reporting about past

actions were examined. Drawing on memory literature, these instructions were specifically designed to affect the informativeness and accuracy of innocent mock suspects' memory output during alibi provision. Experiment 1 demonstrated the effects of instructions emphasising the importance of accuracy and informativeness of the provided information. Specifically, the findings showed that pre-alibi instructions that guided innocent mock suspects to provide an accurate and informative alibi yielded the largest number of correct details (i.e., quantity measure) compared with control condition, without compromising accuracy rates. In contrast, the quantity of information provided and accuracy rates of alibis of guilty mock suspects did not differ between the pre-alibi instructions conditions; this was also true when the examination was only of parts of the alibis that, to report, guilty mock suspects could rely solely on their memory (i.e., reports about first three tasks completed). In Experiment 2 (Chapter 3), I sought to expand Experiment 1 by examining whether memory-based pre-alibi instructions enhanced innocent mock suspects' memory output when reporting about past actions but also about alibi-corroborating evidence. Innocent mock suspects who were asked to report accurately and informatively about their past actions (task instructions condition) or about their past actions *and* alibi-corroborating evidence (enhanced instructions condition) provided a larger number of correct details for their entire alibis than did control participants. However, we did not find that the enhanced instructions led to an increase in the reporting of correct details for the entire alibis compared with participants in the task instructions condition. With respect to accuracy rates, these did not differ between the pre-alibi instructions conditions. Additionally, the number of correct of evidence details provided and their accuracy did not differ between the pre-alibi instructions conditions. Experiment 2 thus replicated Experiment 1 by demonstrating the enhanced performance in the task instructions condition (i.e., the combined accuracy and informativeness pre-alibi

instructions condition in Experiment 1) in terms of number of correct details provided compared with simply requesting participants to report about what had happened. Additionally, Experiment 2 provided support for the enhancing effects of the enhanced instructions with respect to number of correct details provided overall compared with control condition.

In Experiment 3 (Chapter 4), I explored the effects of interviewers' presumption of guilt communicated to innocent mock suspects via the interviewer's words and behaviour on participants' memory output during alibi provision. Neither the quantity of correct details provided nor accuracy rates of alibis differed between the interviewer-belief conditions. Thus, in Experiment 3, no evidence was found that interviewers' guilt presumption affects innocent suspects' memory output when providing an alibi during short interactions.

Chapter 5 presented the findings of a survey administrated among lay people in the United Kingdom, Israel, and Sweden. In this survey, we examined participants' beliefs and knowledge about impaired memory processes as a possible reason for inaccurate alibis of innocent suspects and the issue of interviewers' presumption of guilt. Participants did not tend to believe that innocent suspects may unintentionally provide inaccurate details, but they did acknowledge that if they do, this may be due to impaired memory processes. With respect to interviewers' guilt presumption, participants tended to believe that interviewers usually begin to form an opinion regarding the guilt/innocence of suspects prior to hearing their alibi for the first time but also while suspects are providing their alibi for the first time. A majority of participants also believed that if interviewers approach a suspect interview already presuming guilt, this presumption could affect how interviewers conduct the interview. Finally, while participants tended to believe that interviewers' presumption

of guilt would make suspects more talkative, they did not tend to believe that this would make them confess to a crime.

Theoretical Implications in Context of Existing Literature

The first step that may lead to the prosecution of suspects is an investigative interview conducted with them to discover their potential knowledge about and involvement in an alleged crime. It is thus surprising how little research has been conducted specifically on the process of alibi provision. Even less research has been dedicated to developing interview protocols and testing whether they may improve the process of alibi provision. Most research on the generation and provision of statements by people who might have been involved in a crime has concerned eyewitnesses and victims (e.g., Fisher, 1995; Fisher & Geiselman, 2010; Gabbert, Hope, & Fisher, 2009). However, while providing inaccurate information by an eyewitness or a crime victim may not be harmful to them, the provision of inaccurate information by suspects may be perceived by the interviewer as indicative of deception (Burke, Turtle, & Olson, 2007; Dysart & Strange, 2012; Olson & Charman, 2012). Ultimately, the unintentional provision of inaccurate or incomplete information by suspects may contribute to the wrongful conviction of innocent people (Crozier et al., 2017; Wells et al., 1998).

It is important to discuss the statistical power of the experiments of the current thesis to evaluate the reliability of the findings obtained. In Experiment 1, the effect size obtained for the main effect of the pre-alibi instructions on quantity measure among innocent mock suspects (f = 0.37) was medium-to-large (Cohen, 1988). Moreover, the effect size for the finding that quantity measure was higher in the combined pre-alibi instructions condition than in control condition was very large (d = 0.99; Cohen, 1969). With respect to the main effect of the pre-alibi instructions on number of overall correct details provided in Experiment 2, the effect size (f = 0.33)

was medium (Cohen, 1988). Finally, the effect sizes of the finding of Experiment 2 whereby quantity measure was higher in both the enhanced instructions condition (d = 0.72) and task instructions condition (d = 0.67) compared with control condition were of medium-to-large and medium magnitude, respectively (Cohen, 1969). Obtaining effect sizes of this magnitude allows us to suggest that pre-alibi instructions are effective (in this research, at least) in terms of increasing suspects' memory output. Nevertheless, Experiment 1 was clearly underpowered for obtaining the interaction between the pre-alibi instructions and participants' veracity. Specifically, the actual effect sizes observed for the non-significant interaction between the pre-alibi instructions and veracity for the quantity measure (f = 0.16) and for the accuracy rates (f = 0.03) were both lower than the effect size we could expect to detect according to the post-hoc sensitivity analysis (f = 0.24), and the sample size required to detect interaction effects such as those that we predicted is typically larger than that required to detect main effects (see, e.g., Durand, 2013).. Given the low power of Experiment 1 (as a result of the small sample size), the obtained effect size estimates are less reliable than what might be obtained with bigger sample sizes.

In contrast to Experiment 1, although the sample size of Experiment 2 was not particularly large, the Experiment was likely not underpowered since the JZS BF_{10} was 2.36, indicating that the obtained data were approximately 2.36 times more likely under the alternative hypotheses compared with the null hypotheses, providing anecdotal (Wagenmakers et al., 2018) evidence in favor of the alternative hypotheses for number of overall correct details provided. In addition, the findings of Experiments 2 that the number of correct evidence details provided did not differ between the pre-alibi instructions condition and of Experiment 3 that number of total correct details provided did not differ between interviewer-belief conditions were likely not due to (substantial) low power. This notion is supported by the analyses

according to which the JZS BF_{01} were 2.02 and 3.90 (Experiment 2 and 3, respectively), indicating that the obtained data were approximately 2.02 and 3.90 (respectively) times more likely under the null hypotheses compared with the alternative hypotheses, providing anecdotal and moderate (respectively; Wagenmakers et al., 2018) evidence in favor of the null hypotheses for quantity of correct evidence/overall details provided, respectively. Thus, in general, the findings of the present research are informative and reliable, but all experiments conducted as part of the present thesis should be replicated using larger sample sizes.

The present research is the first to develop and test memory-based reporting instructions (cf. retrieval cues; Leins & Charman, 2016) tailored specifically to be used during interviews with suspects. The findings of Experiments 1 and 2 are important as they suggest that innocent suspects' memory output may be enhanced by guiding them to provide an accurate and informative alibi. The findings of Experiment 1 that the alibis of guilty mock suspects were not affected by the pre-alibi instructions are specifically important as they suggest that memory-based reporting instructions may not assist guilty suspects to improve their accounts. With respect to the findings of Experiment 2 that the enhanced instructions did not result with the largest number of correct evidence details or of entire alibis, these suggest that the nuances of pre-alibi instructions presented to innocent suspects are important. Indeed, asking innocent suspects to report accurately and informatively about alibi-corroborating evidence was just not enough to encourage them to provide more details of this type. These findings stress the need to continue and study interviewing techniques that may actively improve innocent suspects' memory output.

Across Experiments 1, 2, and 3, the present research is also the first to study suspect alibis in terms of the quantity and accuracy rates of the discrete details

provided. Previous research on alibi provision has estimated alibi accuracy by testing whether participants reported in their alibi that, during the critical time, they participated in the critical event (vs. engaged in another activity; Leins & Charman, 2016). Alternatively, alibi accuracy was estimated by examining whether participants changed details across two alibis provided during two separate occasions about the same time frame (Olson & Charman, 2012). While the examination of memory reports in terms of the quantity of the provided information and accuracy rates of details has been conducted previously in the context of eyewitness statements (e.g., Hope, Mullis, & Gabbert, 2013; Pansky & Nemets, 2012), no such examination has been conducted in the context of suspect alibis. When examining memory reports, and specifically, freely-recalled information, analysing the quantity and accuracy rates of details provided is the most appropriate approach (Koriat & Goldsmith, 1996; see also Goldsmith, 2017). Specifically in the context of suspect alibis, when an alibi is investigated, its details are compared against the ground truth available to the interviewer. Studying alibis' completeness and quality by directly comparing between the suspect's report about this event and event details provides a more naturalistic examination of alibis. While the ground truth may be difficult to establish in real-life investigation, a more complete and accurate alibi provided as a result of pre-alibi instructions nevertheless decreases the danger of including incorrect information that may be perceived by alibi evaluators as indication of lying.

Despite the differences between previous research and the present thesis in the manner by which memory accuracy was examined, all of these examinations of alibi provision are important to develop the understudied body of research concerning alibi generation and provision by innocent suspects. Especially relevant to the present thesis is Leins and Charman's (2016) research, in which they demonstrated that memory-based interview prompts (i.e., cued retrieval) may enhance alibi accuracy.

The interview prompts used in Leins and Charman (2016) were intended to affect the memory *search* of participants such that it would be in accordance with the specific cue presented. However, the pre-alibi instructions used in Experiments 1 and 2 in the current thesis were intended to affect innocent suspects' memory *reporting*, namely participants' decision of what and how much information to report after this information has been retrieved. Future research may combine the two interview techniques to examine the effects of pre-alibi instructions with the use of specific cued retrieval of different types on suspects' memory output. Despite the difference between the interview prompts used in the present research and in Leins and Charman (2016), all of these interview prompts were designed based on memory theory—an important approach when aiming to improve innocent suspects' memory output during interviews.

Some deception detection methods may lead innocent suspects to provide more information in their statements. For example, before interviewees provide their statement, presenting them with a model statement—a truthful account about an event unrelated to that they are interviewed about—should inform them of the level of detail that interviewers expect them to provide (Leal, Vrij, Warmelink, Vernham, & Fisher, 2015). Research has shown that providing innocent and guilty mock suspects with a model statement before providing their statement can lead them to provide more information compared with not providing them with such an interview prompt (e.g., Bogaard, Meijer, & Vrij, 2014; Leal, et al., 2015; Porter et al., 2018). In addition, Nahari, Vrij, and Fisher (2014b) demonstrated that to encourage innocent suspects to provide more verifiable details, they should be explicitly informed that the alibi evaluator intends to examine the verifiability of their alibi. However, because these deception detection methods were designed primarily to elicit cues to deception (cf. to enhance innocent suspects' memory output), the quality of the increased amount of

information resulting from the use of these methods was not examined. Such examination is mandatory to discover whether these deception detection methods can be used as a memory-enhancing interview technique. In fact, in Experiment 2 in the present thesis, it may be that informing participants in the enhanced instructions condition that their alibi would be verified would have caused them to provide more (complete and accurate) evidence details compared with participants in the remaining conditions. This should be examined in future research which includes an enhanced instructions condition in which participants are additionally informed that the alibi evaluator intends to check the verifiability of their alibis.

While some deception detection methods may potentially be used as a memory-enhancing interview technique, it may not be feasible to rely on cues to deception when memory-based reporting instructions are used. This notion is demonstrated by the findings of Experiment 1 whereby the pre-alibi instructions did not affect guilty mock suspects' memory output, suggesting that when such instructions are used, guilty suspects may not provide more detailed alibis that include more cues to deception (see Vrij, Mann, Kristen, & Fisher, 2007). Yet, while not increasing the memory output of the guilty mock suspects, none of the pre-alibi instructions used in Experiment 1 compromised the quantity of correct details provided by them (nor the accuracy of the details they provided). Using memory enhancing interview techniques and deception detection methods may both lead to the same desired goal of determining whether or not the suspect was involved in the crime. However, a subtle yet important difference between interview techniques aimed to increase innocent suspects' memory output and those aimed to detect deception suggests that memory-based interview techniques may need to undergo some changes for these techniques to be potentially used as a means to detect deception. Specifically, memory-enhancing interview techniques focus more on

guiding innocent suspects to provide an accurate and informative statement that may promote their exoneration. In contrast, deception detection methods focus more on *eliciting* cues to deception that may assist *interviewers* with deciding whether a suspect is lying when denying involvement in a crime (Vrij, 2008b). Nevertheless, if changes are made in memory-based interview techniques so that these can be used to elicit cues to deception, the purpose of eliciting accurate and complete information must not be compromised by the purpose of detecting deception. More specifically, as evident from findings of the current thesis (i.e., Experiments 1 and 2), the nuances of the instructions provided to suspects are crucial when attempting to increase innocent suspects' memory output. Thus, when formulating and using deception detection methods, these nuances must not be neglected.

The present research is also the first to examine the effects of interviewers' guilt presumption on the completeness and accuracy of suspect alibis. Previous research has examined and demonstrated the effects of this guilt presumption on the behaviour of the interviewer during suspect interviews, and, consequently, on the judgment made by neutral perceivers of the veracity of the interviewed mock suspects (Hill, Memon, & McGeorge, 2008; Kassin, Goldstein, & Savitsky, 2003). The present research expands these previous findings by showing that, when it comes to short interactions with a guilt-presumptive interviewer, innocent suspects succeed in remaining accurate and informative when providing their alibi. These findings are not surprising when considering that innocent suspects typically believe that their innocence can set them free (Hartwig, Granhag, & Strömwall, 2007; Kassin & Norwick, 2004; Vrij, Granhag, & Porter, 2010), and this belief likely led participants in the guilty-belief condition to be as informative as participants in the innocent-belief condition. Thus, the findings of Experiment 2 embody yet another demonstration of the confidence innocent suspects have in the power of their innocence.

Finally, previous surveys conducted among lay people on suspect interviews examined participants' beliefs regarding cues that may differentiate truthful from deceptive suspects (e.g., Akehurst, Köhnken, Vrij, & Bull, 1996; Masip & Herrero, 2015). The survey conducted in the present research is the first to examine lay people's knowledge and beliefs regarding factors concerning the interview process itself with respect to how these factors might have prevented innocent suspects from providing a convincing alibi to begin with.

Combined, the findings reported in the present thesis suggest that further efforts should be dedicated to studying the process of alibi provision by innocent (and guilty) suspects. In particular, Experiments 1 and 2 suggest that when the goal of using interview techniques is enhancing the memory output of innocent suspects (cf. deception detection), pre-alibi instructions should be developed with memory theory taken into consideration.

Practical Implications

The introduction of the PEACE interview model (Central Planning and Training Unit, 1992a, 1992b) was undoubtedly a crucial first step in improving the interview process of suspects in the UK. The change from the confession-seeking interrogation to the ethical interview in order to gather information was a positive step in attempting to decrease instances of miscarriages of justice. Combined with allowing suspects to present their version of events and asking them to tell the interviewer everything they did on the critical time frame of the alleged crime, this change likely improved the process of case investigation (Griffiths & Milne, 2006; Shawyer, Milne, & Bull, 2009). However, the findings of the present thesis (Experiments 1 and 2) suggest that merely asking suspects to describe events in their own words is not enough, and that interviewers may need to present suspects with specific memory-based reporting instructions to guide and enhance their memory output. Yet, it is too

early to determine based on the present thesis what might be the optimal way to ask suspects to report about their past actions and whereabouts when providing an alibi. Further research is needed to structure the best memory-based pre-alibi instructions. The present findings do suggest that asking innocent suspects to provide an accurate and informative alibi should benefit them compared with not asking them to do so. Such pre-alibi instructions do not require specific training and should not facilitate guilty suspects' alibi provision.

At a first glance, Experiment 3 may seem to suggest that if a guilt-presumptive interviewer conducts interviews with suspects, this may have no effect on innocent suspects' memory output in terms of the completeness and accuracy of their alibis. However, it would be a mistake to conclude from these findings that interviewers do not have to follow the recommendation to avoid guilt presumptions. Interviewers are unlikely to change their initial guilt belief even if an innocent suspect behaved in contrast to an interviewer's guilt expectation (see Darley & Fazio, 1980), and the persistence of this guilt belief may affect further interactions with this suspect. For example, after a guilt-presumptive interviewer obtained the suspect's alibi, s/he is likely to investigate the suspect's story. The interviewer may discover during the investigation that the information that the (innocent) suspect provided during the interview was correct. However, instead of attributing the suspect's verbal behaviour to the suspect's actual innocence (see, e.g., Darley & Fazio, 1980), the interviewer may continue to believe that this suspect is guilty and continue to interview him/her with the belief that s/he is guilty when further interacting with this suspect. Therefore, when it comes to short interactions with a guilt-presumptive interviewer, the findings of Experiment 3 should be seen as strictly exploratory in revealing the nature of innocent suspects' behaviour when interviewed by a guilt-presumptive interviewer.

The findings of Experiment 3 provide some indirect support for the long-existing notion that interviewers should use more open-ended than close-ended interview prompts (Fisher Milne, & Bull, 2011; Geiselman, Fisher, MacKinnon, & Holland, 1985, 1986). Close-ended interview prompts are usually suggestive, confine the rememberer to choose between a limited number of response options presented by the interviewer and to reply to each question, and encourage guessing (Koriat & Goldsmith, 1996; see also Lamb et al., 2003). In contrast, when open-ended interview prompts are used, rememberers are free to produce their own answers and report only the information they are confident that they remember (Koriat & Goldsmith, 1996). Consequently, open-ended interview prompts encourage the provision of a narrative response which is more complete and accurate compared with yes/no or forced-choice questions (Fisher et al., 2011; Geiselman et al., 1985; Koriat & Goldsmith, 1996; Lamb et al., 2003). In Experiment 3, although some participants provided their alibi to a guilt-presumptive interviewer, they were given the opportunity to freely provide their account, ultimately providing an alibi as informative and accurate as that of rest of participants. Thus, while a guilt presumption may be difficult to avoid even with training (see, e.g., Shawyer & Milne, 2015), Experiment 3 suggests that using open-ended interview techniques may protect innocent people from the effects of interviewers communicating their guilt presumption (although this was not directly tested in the current thesis). Future research may examine how pre-alibi instructions and interviewers' guilt presumption affect innocent suspects' memory output when these factors are manipulated together. Also, participants in the present thesis were only asked to provide specific information in the form of an alibi. Thus, the effects of the pre-alibi instructions and guilt presumption should be examined together (and separately) as part of a fuller interview, whereby suspects are asked to provide an alibi and then reply to subsequent questions.

The findings of Experiment 3 are more relevant for real-life interviews in which interviewers unintentionally communicate a guilt belief to suspects. However, in some cases, even if interviewers do not use accusatory interview techniques, they may be required by law to inform suspects of the degree of suspicion they are under. Such is the case in Sweden, where in accordance with the Swedish Code of Judicial Procedure, police officers must inform suspects at the outset of the interview of the degree of suspicion (see Granhag, Clemens, & Strömwall, 2009). This procedure is different from the *implicit* communication of guilt presumption examined in the current thesis. It is first necessary to determine whether the fact that interviewers inform suspects of the degree of suspicion they are under affects the behaviour of the interviewers. Additionally, it could be examined how informing suspects of level of suspicion affects their memory output when the interviewer who provides this information is behaving in an innocence-presumptive, guilt-presumptive, or neutral manner.

Turning to the findings of the survey, these are important in light of the complex nature of jury service, whereby citizens unfamiliar with legal matters are expected to assess the credibility of suspects' alibis while exposed to a variety of other information (Bornstein & Greene, 2011; Greene & Bornstein, 2000; Porter & ten Brinke, 2009). The finding that participants did not believe that innocent suspects may provide inaccurate alibis embodies another demonstration of prospective jurors' lack of understanding of issues concerning psychology and law and is consistent with previous findings that demonstrated this poor knowledge by lay people (e.g., Benton, Ross, Bradshaw, Thomas, & Bradshaw, 2006; Simons & Chabris, 2011, 2012). For example, Benton et al. (2006) found that agreement between 111 jurors from the United States and 64 eyewitness experts regarding items concerning eyewitness issues (e.g., memory, weapon focus, and elderly witnesses) was obtained only on four (13%)

of 30 items. This finding suggests that eyewitness experts' testimony may be required in court to educate jurors regarding correct information concerning eyewitness testimony. Because incorrect information provided by suspects may be perceived as an indication that the suspect is lying (Burke et al., 2007; Dysart & Strange, 2012; Olson & Charman, 2012), the findings of the survey conducted in the present thesis add to this existing body of research by demonstrating that jurors may also benefit from being explicitly informed that innocent suspects may provide inaccurate details despite being motivated to be accurate. The finding that participants believed that interviewers form a belief regarding suspects' guilt/innocence prior to meeting them but at the same time believed that interviewers may form this belief during the interview suggests that jurors may also need to be explicitly informed that suspects sometimes provide their alibi to a guilt-presumptive interviewer; this should be done especially when suspects complain that their interviewer treated them as if they had already decided that they were guilty, just as was the case with Ronald Cotton (see Chapter 1).

In sum, the findings reported in the current thesis are encouraging in demonstrating that some types of pre-alibi instructions may assist innocent suspects with providing accurate and informative alibis and interviewers with obtaining complete and accurate reports from suspects. However, the need for further research prevents us from providing direct recommendations of how to apply the present findings into real-life suspect interviews. At present, it may be suggested that interviewers continue to allow suspects to provide a free account of events, in their own words, without being interrupted and without giving them feedback on the details as they provide them. Such open-ended prompts may also act as a safeguard when the interviewer approaches the interview already believing that the suspect is guilty. For the sake of innocent suspects who fail to provide a convincing alibi, judges must not

prevent memory and interview experts from discussing relevant research findings in court on the grounds that "such research would tell jurors little that they did not already know" (Kassam, Gilbert, Swencionis, & Wilson, 2009, p. 552). As jurors play a crucial role in determining the fate of innocent people, they should be educated as much as possible prior to fulfilling their duty.

Methodological Considerations and Future Directions

Although the findings of the current thesis are generally reliable, due to several limitations outlined below these findings should be treated with caution.

In Experiments 1 and 2, calculating and analysing the quantity and accuracy rates of participants' alibis enabled us to conclude regarding the effects of the pre-alibi instructions on participants' memory output. However, the present findings do not inform us regarding *why* the pre-alibi instructions produced the effects they did. For example, since we did not calculate participants report criterion, we cannot conclude whether monitoring and control processes produced the obtained results. Alternatively, it may be that the higher quantity measure obtained among innocent mock suspects in the accuracy and informativeness instructions condition (Experiment 1) resulted from these participants engaging in a more thorough memory search compared with control innocent mock suspects. Not knowing how the underlying mechanisms operated to produce participants' alibis does not limit our conclusions. Yet, a better understanding of the process of alibi generation and provision may be obtained by learning about the operation of mechanisms that produce suspects' memory output. To this end, future research on alibi generation should, for example, develop a paradigm that would allow the calculation of innocent (and guilty) suspects' report criterion to further examine the metacognitive monitoring and control processes underlying alibi provision. This would require asking participants to report (i) their confidence in the correctness of the details reported; (ii) the details they retrieved but

withheld (i.e., chose not to report), and; (iii) their confidence in the correctness of these withheld details (Koriat & Goldsmith, 1996).

The present findings demonstrate the importance of including several experimental and control conditions to discover what aspects of a manipulation lead to the enhancement of participants' memory output. For example, it is yet to be determined whether the enhanced performance in both experimental conditions in Experiment 2 compared with the control condition was due to the fact that these experimental conditions instructed participants to report about certain types of details (i.e., past actions and corroborating evidence), the fact that they guided participants how to provide accurate and informative alibis, or both. In hindsight, we should have included in Experiment 2 a condition in which participants would only be asked to report accurately and informatively about alibi-corroborating evidence, just as there was a condition in which participants were only asked to report accurately and informatively about their past actions. Including this individual evidence instructions condition would align with the procedure of Experiment 1, in which there were a combined accuracy and informativeness pre-alibi instructions condition as well as individual accuracy and informativeness instructions conditions. It would also align with the procedure of Leins and Charman (2016), who included three conditions of recall cue to examine their effects on alibi accuracy: a time-only cue, a location-only cue, and a combined time-and-location cue. The inclusion of several experimental and control conditions is important when attempting to develop the most effective interviewing techniques in the hope of enhancing innocent suspects' memory output., as well as when seeking to discover effects of other aspects of the interview (e.g., interviewers' guilt presumption) on suspects' verbal behaviour.

In Experiment 1, despite obtaining non-significant interaction effects between pre-alibi instructions and participants' veracity on both quantity of correct details and

accuracy rates, we conducted further analyses to examine the effects of the pre-alibi instructions on the dependent measures among each veracity condition separately. Conducting these additional analyses was based on existing findings concerning liars' and truth-tellers' verbal behaviour during alibi provision (e.g., Hartwig et al., 2010; Olson & Charman, 2012; for a meta-analysis, see DePaulo et al., 2003), and was done following previous research that used a similar analysis strategy despite a null interaction (Nahari & Ben-Shakhar, 2011; Porter et al., 2018; Shaw et al., 2015). Although these additional analyses showed a medium-to-large (f = 0.37; Cohen, 1988) effect size for the pre-alibi instructions on the quantity measure among the innocent participants and a lack of effect of the instructions among the guilty participants, future research should use a larger sample size in an attempt to demonstrate the interaction effects that we predicted between pre-alibi instructions and veracity for the quantity measure.

With respect to the survey we conducted, it cannot be determined from its findings whether participants would consider the factors of impaired memory processes and interviewers' guilt presumption if asked to evaluate the credibility of a suspect's alibi in court. Future research on lay people's beliefs regarding issues concerning alibi provision may include additional questions concerning this process while examining participants' decision-making process during an evaluation of a mock alibi.

A key element of the procedures used in the experimental studies of this thesis (i.e., Experiments 1, 2, and 3) was that participants completed tasks under specific task instructions. This served our aim of comparing participants' alibi with the critical event for the calculation and analyses of quantity of correct details provided and accuracy rates of alibis. Although the non-criminal tasks that comprised the critical event in each study required participants to perform day-to-day actions, the nature of

these actions may not represent the nature of participants' day-to-day activities, and thus critical events of more realistic nature might be used to study the quantity and accuracy of alibis and to replicate the findings of Experiment 1. In addition, such research could examine the effects of the enhanced instructions used in Experiment 2 with the inclusion of informing participants of the alibi evaluator's intention to verify their alibi.

Another aspect of the critical event (i.e., task completion) we applied in Experiments 1 and 3 concerns the location of the "crime". Participants in both Experiments were asked to report about task completion to explain why they could not have committed a crime that was committed in the *same* location as the one in which they had completed the tasks. It could then be claimed that the statement that participants provided was not an alibi according to its common definition, that is, "A defense that places the defendant at the relevant time of crime in a different place than the scene involved and so removed therefrom as to render it impossible for him to be the guilty party" (Black, 1990, p. 71). Although a legitimate critique, it does not undermine the conclusions derived from these Experiments. Importantly, in the three Experiments in which participants were asked to report about their past actions or/and corroborating evidence (Experiments 1, 2, and 3), participants provided their statement to exonerate themselves, and this made this statement their alibi (see Burke et al., 2007). Moreover, when it was crucial that participants could report about evidence that supported their presence in a location *different* from that of the "crime scene" (Experiment 2), we designed the procedure such that the location of task completion and that of the "crime" were different.

More generally with respect to the procedures used in the present thesis, the time interval between the critical event and alibi provision was relatively short across all three experimental studies, and likely shorter than time intervals between real-life

crimes and interviews. In the present thesis, concluding reliable conclusions on any effects of the pre-alibi instructions and interviewers' guilt presumption on participants' memory output required that we eliminated any factors that could potentially intervene with the effects of these manipulations. The most likely factor to intervene would be memory contamination (see, e.g., Frenda, Nichols, & Loftus, 2011; Loftus, Miller, & Burns, 1978; Tourangeau, 2000), which would make it difficult to statistically detect effects of the different manipulations. In fact, by administrating the time interval we did in Experiment 3, we followed previous research in which the effects of interviewers' presumption of guilt were tested (e.g., Hill et al., 2008). There are applied contexts in which possible suspects might be initially questioned at the crime scene or nearby very soon after an incident has occurred. Nevertheless, Experiments 1, 2, and 3 should be replicated in future research with longer time intervals. It may be that larger effects of the pre-alibi instructions would be observed then, as these instructions are intended to guide the retrieval of truthful rememberers.

Due to ethical constraints, in procedures that include mock suspects, participants are never asked to commit a real crime, and the crimes they are accused of are not particularly serious (typically thefts or minor infractions of rules; e.g., Hartwig et al., 2007; Vrij et al., 2009). For the same reasons, the present research also included accusations of relatively minor crimes (e.g., theft of a wallet). Due to the same ethical constraints, and also in accordance with previous research (e.g. Hartwig et al., 2007; Vrij et al., 2009), participants were told that if they succeeded or failed in convincing the interviewer of their innocence, they would have a chance to receive a monetary prize or be asked to hand-write a second alibi, respectively. Clearly, these implications of the interviewer's veracity judgment of participants' alibi are incomparable with the positive outcome of being exonerated or negative outcome of being imprisoned (or

worse) in real-life cases. With such real-life outcomes, the manipulations used in the three experimental studies of this thesis may result with different behaviours of innocent suspects than those observed in the present thesis. For example, consider an innocent suspect being interviewed by a guilt-presumptive interviewer who may be sentenced to 15 years in prison for allegedly physically harming a person. Experiencing the guilt-led behaviour of the interviewer and fearing the severe potential punishment may stun the suspect and make him less talkative compared with participants in the guilt-belief condition in Experiment 3, ultimately supporting the interviewer's belief. Future research may examine whether the level of "attractiveness" of potential prizes and punishments interacts with interviewers' belief-led behaviour or pre-alibi instructions in affecting innocent suspects' memory output.

Because the guilty participants in Experiment 1 were not asked to commit a real and serious crime, and because the implications of the interviewer's judgment of their alibi were incomparable with those faced by real-life suspects, it may be that these participants did not believe the cover story that they told the interviewer when providing their alibi. However, what was more important was that participants would be motivated to make *the interviewer* believe their cover story. In real life police interviews, it is likely that guilty suspects often do not believe their cover story; instead, they are likely more occupied with making the interviewer believe their story and are motivated to do so to the same extent as innocent suspects (hence the findings showing that verbal and nonverbal strategies are used during police interviews to a larger extent by liars than truth-tellers; see, e.g., Hartwig et al., 2007; Hartwig, Granhag, Strömwall, & Doering, 2010; Strömwall, Hartwig, & Granhag, 2006). Indeed, in Experiment 1, the guilty participants were motivated to convince the interviewer of their innocence to the same level as were the innocent participants,

which suggest that participants in both conditions put effort into providing a convincing alibi.

Finally, prior to commencing data collection, a favourable ethical opinion was obtained from the Department's Ethics Committee for all of the studies included in the current thesis (see Appendices and Supplemental Materials). Nevertheless, it may be that, in the three experimental studies, participants became anxious by being (surprisingly) accused of committing a crime, followed by meeting an interviewer (and even an accusatory one in Experiment 3) in order to provide her an alibi, and in Experiment 1 – by being asked to lie. However, several steps were being followed by me and my research assistants to ensure participants' wellbeing during study sessions. Firstly, during each study session, we followed the ethical protocol which was reviewed by the Ethics Committee prior to data collection. This protocol detailed the different phases of the study and how we were to behave with participants. In addition, if a participant displayed any signs of discomfort during any phase of the study, we ensured to ask the participant if they felt comfortable to continue with the study session (or, we ended it immediately when the discomfort displayed by the participant was clear); such instances were nonetheless very rare. Finally, at the end of each study session, participants were thoroughly debriefed and were given all the time needed to ask any questions, and were provided with contact details for any later queries.

To conclude, future research on alibi generation should apply more naturalistic procedures than those used in the present research. Nevertheless, this should not be done at the expense of the ability to conclude directly regarding the effects of the manipulations on the examined measures. Drawing more accurate conclusions on effects of manipulations on suspect-participants' memory output may be achieved by

ensuring experimental control by eliminating factors that may intervene with effects of the examined manipulations.

Conclusions

In three experimental studies and one survey, the present thesis examined the process of alibi provision by innocent suspects to further understand this process and discover means to improve it. The findings of the present research demonstrate that specific memory-based reporting instructions presented to innocent suspects prior to alibi provision may increase their memory output. These findings suggest that such instructions should be designed carefully to encourage innocent suspects to provide information of the required type and level of completeness and quality. The present research also demonstrates that innocent suspects' memory output may not be sensitive to a guilt-driven behaviour of the interviewer during short interviews, but warrants that guilt presumptions must still be avoided. Lastly, the findings of the survey demonstrate that lay people hold some mistaken beliefs regarding factors that may hamper innocent suspects' ability to provide accurate alibis. Future research should establish whether lay people actually consider these factors when serving their jury duty. Despite the limitations outlined, the procedures used in the present thesis were designed to ensure that the conclusions drawn from the obtained results would be reliable and accurate. The current thesis paves the way to further theoretical and practical research on alibi provision by innocent suspects in general, and on factors that can improve (and might challenge) this process in particular. The future of alibi research is exciting yet challenging, as much additional research is required to reveal more factors that are involved in and underlie the provision of suspect alibis.

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Appendices and Supplemental Materials

Appendix A: Favourable Ethical Opinion for Experiment 1, Chapter 2

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20/10/2015

FAVOURABLE ETHICAL OPINION

Study Title: **Strategic regulation and reporting in the alibis of innocent and guilty suspects**
Reference Number: **SFEC 2015-064** (Please quote this in any correspondence)

Thank you for resubmitting your application to the Science Faculty Ethics Committee (SEFC) for ethical review following the 1st SFEC review dated 12th October 2015 in accordance with current procedures[1].

I am pleased to inform you that SFEC was content to grant a favourable ethical opinion of the above research on the basis described in the submitted documents listed at Annex A, and subject to standard general conditions[2]

Please note that the favourable opinion of SFEC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any host organisation, including the University of Portsmouth or supervisor, prior to the start of the study.

Wishing you every success in your research

Yours sincerely,

[1] Procedures for Ethical Review, Science Faculty Ethics Committee, University of Portsmouth, October 2012 (to be updated).
[2] After ethical review – Guidance for researchers (Please read).

Appendix B: Favourable Ethical Opinion for Experiment 2, Chapter 3

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31 October 2017

FAVOURABLE ETHICAL OPINION – FOLLOWING RESUBMISSION

Study Title: Effects of pre-alibi instructions on innocent suspects' memory output regarding a critical time.

Reference Number: SFEC 2017-101

Date Resubmitted: 26 October 2017

Thank you for resubmitting your application to the Science Faculty Ethics Committee (SFEC) for ethical review in accordance with current procedures, for making the requested changes following the first SFEC review, and for the clarifications provided.

I am pleased to inform you that SFEC was content to grant a favourable ethical opinion of the above research on the basis described in the submitted documents listed at Annex A, and subject to standard general conditions (*See Annex B*).

Please note that the favourable opinion of SFEC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any host organisation, including the University of Portsmouth or supervisor, prior to the start of the study.

Wishing you every success in your research

Dr Paul Morris
Vice Chair, Science Faculty Ethics Committee

Annexes

A - Documents reviewed
B - After ethical review - Guidance for researchers

Information:

Appendix C: Favourable Ethical Opinion for Experiment 3, Chapter 4

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Shiri Portnoy
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University of Portsmouth

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14 December 2016

FAVOURABLE ETHICAL OPINION – WITH CONDITIONS

Study Title: The effect of interviewers' presumed belief regarding innocent suspects' veracity on the accuracy and quantity of their alibis

Reference Number: SFEC 2016-104

Date Submitted: 14 December 2016

Thank you for submitting your protocol to the Science Faculty Ethics Committee (SEFC) for ethical review in accordance with current procedures[1].

I am pleased to inform you that SFEC was content to grant a favourable ethical opinion of the above research on the basis described in the submitted documents listed at Annex A, and subject to standard general conditions (*See Annex B*), and the following specific minor conditions.

Condition

A. The changes you have made have addressed our concerns for the most part. We remain, however, concerned about the level of anxiety that could be associated with an accusation of theft of a wallet. Specifically, this is a crime serious enough to warrant calling the police, itself a 'formal or serious consequence' (especially for those who may need a DBS check for future employment purposes, for example). We feel this anxiety can be reduced by the research team clearly stating, at the point where they explain to the participants that successfully convincing the interviewer of their innocence will lead to them being entered into a prize draw, that you will not involve the police in this 'investigation'. Thank you.

If you would find it helpful to discuss any of the matters raised above or seek further clarification from a member of the Committee, you are welcome to contact ethics-sci@port.ac.uk who will circulate your queries to SFEC

Please note that the favourable opinion of SFEC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any

Appendix D: Favourable Ethical Opinion for Survey, Chapter 5

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14 June 2017

FAVOURABLE ETHICAL OPINION – FOLLOWING RESUBMISSION

Study Title: Police officers' and public's perceptions and beliefs regarding the quality and informativeness of suspects' alibis

Reference Number: SFEC 2017-054

Date Resubmitted: 06 June 2017

Thank you for resubmitting your application to the Science Faculty Ethics Committee (SEFC) for ethical review in accordance with current procedures, for making the requested changes following the first SFEC review, and for the clarifications provided.

I am pleased to inform you that SFEC was content to grant a favourable ethical opinion of the above research on the basis described in the submitted documents listed at Annex A, and subject to standard general conditions (*See Annex B*).

Please note that the favourable opinion of SFEC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any host organisation, including the University of Portsmouth or supervisor, prior to the start of the study.

Wishing you every success in your research

Dr John Crossland
Vice Chair, Science Faculty Ethics Committee

Annexes

A - Documents reviewed
B - After ethical review - Guidance for researchers

Information:

Professor Lorraine Hope - PhD Supervisor
Professor Aldert Vrij – 2nd PhD Supervisor

Appendix E

FORM UPR16

Research Ethics Review Checklist

Please include this completed form as an appendix to your thesis (see the Research Degrees Operational Handbook for more information

Postgraduate Research Student (PGRS) Information			**Student ID:**	795861	
PGRS Name:	Shiri Portnoy				
Department:	Psychology	**First Supervisor:**	Prof. Lorraine Hope		
Start Date: (or progression date for Prof Doc students)	August 31, 2015				
Study Mode and Route:	Part-time ☐ Full-time ☒	MPhil ☐ PhD ☒		MD ☐ Professional Doctorate ☐	

Title of Thesis:	Memory-Based Approaches to The Examination of Alibis Provided by Innocent Suspects
Thesis Word Count: (excluding ancillary data)	51,053

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

UKRIO Finished Research Checklist:
(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: http://www.ukrio.org/what-we-do/code-of-practice-for-research/)

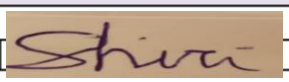
a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES ☒ NO ☐
b) Have all contributions to knowledge been acknowledged?	YES ☒ NO ☐
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES ☒ NO ☐
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES ☒ NO ☐
e) Does your research comply with all legal, ethical, and contractual requirements?	YES ☒ NO ☐

Candidate Statement:

I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)

Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):	SFEC 2015-064 SFEC 2016-104 SFEC 2017-054 SFEC 2017-101

If you have *not* submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:

Signed *(PGRS)*:  **Date:** September 23, 2018

JPR16 – April 2018

Appendix F: Verbatim of the Pre-Alibi Instructions (Experiment 2)

Task Instructions condition

Report in a truthful manner all the details that you can remember about each task separately, including the sequence of actions, objects you used and anything that happened as part of completing each task. It is very important that the information you provide in your alibi is as accurate and informative as possible.

To achieve an accurate report, make sure that every piece of information you report about each task is as accurate as possible. Avoid guessing about details you cannot remember. To achieve an informative report, make sure that every piece of information you report in your alibi about each task that you have just completed is as informative as possible, such that the Building Manager, who has not completed those tasks, would be able to complete them perfectly just by reading your alibi.

Enhanced Instructions Condition

Report in a truthful manner all the details that you can remember about each task separately, including the sequence of actions, objects you used and anything that happened as part of completing each task, as well as any evidence that supports your alibi. This evidence you include could be any object or person that can confirm that you were in a specific place at a specific time while completing the tasks. It is very important that the information you provide in your alibi is as accurate and informative as possible.

To achieve an accurate report, make sure that every piece of information you report about each task, and the supporting evidence, is as accurate as possible. Avoid guessing about details you cannot remember. To achieve an informative report, make sure that every piece of information you report in your alibi about each task that you

have just completed is as informative as possible, such that the Building Manager, who has not completed those tasks, would be able to complete them perfectly just by reading your alibi, and would also be able to recognize the evidence just by reading your alibi.

Control Condition

When providing your alibi, report in a truthful manner all the details that you can remember about your time away from the lab.

Appendix G: Scripts Used in Each Interviewer-Belief Condition

(Experiment 3)

Guilty-Belief Condition

Providing this alibi is part of our formal procedure in instances involving a theft.

It's a *problem* that we have to be in this situation.

You will *need* to provide this alibi.

But let me tell you this—your alibi will need to be *a good one to convince me* that you did not steal the wallet.

After preparation time

With this alibi you *could* convince me that you did not steal this wallet.

I am not sure whether you will succeed.

Innocent-Belief Condition

Providing this alibi is part of our formal procedure in instances involving a theft.

I *apologize* that I have to put you in this situation.

I *have to ask you* to provide this alibi.

But let me calm you down—you just need to provide your alibi *to confirm* that it could not have been you who has stolen the wallet.

After preparation time

With this alibi you *can* convince me that you did not steal this wallet.

I am sure you will succeed.

Neutral-Belief Condition

Providing this alibi is part of our formal procedure in instances involving a theft.

This is a standard situation in which you are asked to provide your alibi.

You need to provide your alibi *to explain* why it could not have been you who has stolen the wallet.

After preparation time

With this alibi you *may or may not* convince me that you did not steal this wallet.

Appendix H: English Version of The Questionnaire

Perceptions and beliefs regarding suspects' alibis

Participant Information Sheet

Ethics Committee Reference Number: SFEC 2017-054
Principal Investigator: Shiri Portnoy
Telephone: 023 9284 6317
Email: shiri.portnoy@port.ac.uk
Supervisor: Prof Lorraine Hope
Telephone: 023 9284 6329
Email: Lorraine.Hope@port.ac.uk

Invitation

We would like to invite you to take part in our research. Before you decide if you wish to participate, please read the information below regarding why the research is being done and what it would involve for you. Do contact us if anything is unclear.

What is the purpose of the study?

In this study, we are investigating the beliefs that members of general public, such as yourself, hold regarding alibis. For the purposes of the current study, an alibi is a report that suspects (who may be innocent or guilty) provide to an interviewer who is seeking to find out whether they committed a crime or not. Suspects might report things they have done, people they have met, and other details that relate to the time period of the alleged crime in their alibi.

We are interested in your beliefs regarding the differences between alibis that are provided by suspects who, during an investigative interview, are being truthful while providing their alibi regarding their alleged involvement in a crime as opposed to suspects who are being deceitful during such interviews.

More specifically, this study is investigating the perceptions of the general public of what information is included in a truthful alibi as opposed to the information that is included in a deceptive alibi.

Do I have to take part?

No, taking part in this research is entirely voluntary. It is up to you to decide if you want to volunteer for the study. We will describe the study in this information sheet. If you agree to take part, we will then ask you to complete a consent form in the next screen.

What will happen to me if I take part?

You will complete one online questionnaire which is comprised of eight open- and close-ended questions. It will take approximately 10 minutes to complete the questionnaire. There are no wrong or right answers – we are only interested in your beliefs.

Expenses and payments

Upon completing the questionnaire, your name will be entered to a raffle in the chance to win an Amazon shopping voucher worth £20. Nevertheless, your name will be kept separately from your responses and other details you provide in the survey to ensure anonymization.

What are the possible disadvantages, burdens and risks of taking part?

There are no foreseeable risks or disadvantages associated with participating in this study.

Will my taking part in the study be kept confidential?
The raw data (i.e., your responses to the questions in the questionnaire), which does not identify you, will be kept securely by the Principal. Hard copy data will be stored in a locked filing cabinet in a locked office (when not occupied by the Principal Investigator). Raw data and informed consent forms will be retained for at least 10 and 30 years respectively.
The data may be presented to others at academic conferences, or published as a project report, academic dissertation or in academic journals or book.
The raw data will not be passed to anyone outside the study team without your express written permission. The exception to this will be any regulatory authority which may have the legal right to access the data for the purposes of conducting an audit or enquiry, in exceptional cases. These agencies treat your personal data in confidence.
We will ask you for some biographical details to produce summary statistics, but we do not require you to provide any information that will identify you. Data Management principles encourage researchers to share information they collect in the course of research, and that information can be held for 10 years or more, but we will never share anything that identifies you, as your data will be kept anonymously once collected.

What will happen if I don't want to carry on with the study?
You can stop completing the questionnaire at any time without giving a reason if you do not wish to. If you do withdraw from the study after answering even one question, this will be treated as your request not to continue with your participation in the study, and we will not use of this data. However, if you choose to complete the entire questionnaire and submit your responses, it will not be possible to withdraw your data, because once collected, all data is kept anonymously.

What if there is a problem?
If you have a query, concern or complaint about any aspect of this study, in the first instance you should contact the Principle Investigator, or her supervisor. The contact details for both of them are detailed on page 1.
If your concern or complaint is not resolved by the Principle Investigator or her supervisor, you should contact the Head of Department: The Head of Department of Psychology, University of Portsmouth: Dr. James Ost, james.ost@port.ac.uk, 023 9284 6311; King Henry Building, King Henry 1st Street, Portsmouth, Hampshire, PO1 2DY The University Complaints Officer ; 023 9284 3642; complaintsadvice@port.ac.uk **Who is funding the research?**
This research is being funded by a PhD bursary to the lead researcher, Shiri Portnoy from the Erasmus Mundus Joint Doctorate programme – The House of Legal Psychology. None of the researchers or study staff will receive any financial reward by conducting this study, other than their normal salary / bursary as a student / staff member of the University.

Who has reviewed the study?
Research involving human participants is reviewed by an ethics committee to ensure that the dignity and well-being of participants is respected. This study has been reviewed by the Science Faculty Ethics Committee and been given favourable ethical opinion.
Thank you
Thank you for taking time to read this information sheet and for considering volunteering for this research. If you do agree to participate your consent will be sought; please see the consent form in the following screen.

Informed Consent Form

1. I confirm that I have read and understood the attached information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I understand that data collected during this study could be requested by regulatory authorities. I give my permission for any authority, with a legal right of access, to view data which might identify me. Any promises of confidentiality provided by the researcher will be respected.

4. I understand that the results of this study may be published and / or presented at meetings or academic conferences, and may be provided to research sponsors (Erasmus Mundus – The House of Legal Psychology). I give my permission for my anonymous data, which does not identify me, to be disseminated in this way.

5. I agree to the data I contribute being retained for any future research that has been approved by a Research Ethics Committee.

6. I confirm that I have never had to provide an alibi as part of a police interviewing.

7. (Optional) This is my email address and by providing it I agree that it will be entered to the prize draw of a £20 Amazon voucher.
I confirm that I understand that my email address will not be used for any purpose other than contacting me in case I win the voucher, and that I will enter the prize draw only if I complete the entire questionnaire.
Please enter here your email address:

8. I agree to take part in this study.

Please complete the following details

Name of Participant: **Date:**

Please read the following information carefully.

> What do we mean when we use the term "alibi" in this survey?

For the purposes of the current study, an alibi is a report that suspects (who may be innocent or guilty) provide to an interviewer who is seeking to find out whether they committed a crime or not.

In their alibis, suspects might report things they have done, people they have met, and other details that relate to the time period of the alleged crime.

> In the questions to follow, you will encounter the terms "truth-telling suspects" and "lie-telling suspects".

By **truth-telling suspects**, we mean people who are suspected of a crime who **tell the truth in their alibi**.

In contrast:

By **lying suspects**, we mean people who are suspected of a crime who **lie in their alibi**.

The Questions

1) In their alibis, suspects can report different types of details.

Below is a list of the **different types of details** that could be reported in alibis of any suspect.

Using the rating scale below, indicate **the extent to which you think each type of detail is provided in alibis of lying suspects or/and truth-telling suspects.**

This type of detail is provided...	1 **substantially more in liars' alibis** than in truth-tellers' alibis	2 **much more in liars' alibis** than in truth-tellers' alibis	3 **somewhat more in liars' alibis** than in truth-tellers' alibis	4 **to the same extent** in liars' and truth-tellers' alibis	5 **somewhat more in truth-tellers' alibis** than in liars' alibis	6 **much more in truth-tellers' alibis** than in liars' alibis	7 **substantially more in truth-tellers' alibis** than in liars' alibis
Setting details (i.e., description of the crime scene and/or any other places described in the alibi)	○	○	○	○	○	○	○
Temporal details (i.e., description of the order in which events took place and/or the specific times and dates in which events occurred)	○	○	○	○	○	○	○
Object details (i.e., details about objects used by the suspect and/or by others described in the alibi)	○	○	○	○	○	○	○
Person description details (i.e., details about the appearance of other people described in the alibi)	○	○	○	○	○	○	○
Self-action details (i.e., details about actions taken by the suspect)	○	○	○	○	○	○	○
Others' action details (i.e., details about actions taken by people described in the alibi that are not the suspect)	○	○	○	○	○	○	○

2) When **truth-telling suspects** provide an alibi, what **strategies** do you think they typically use **to make their alibi seem truthful and convincing to the interviewer?**
(Strategies may relate to how they behave during the interview, their line of reasoning and thinking, what they choose to say, etc.)

3) When **lying suspects** provide an alibi, what **strategies** do you think they typically use **to make their alibi seem truthful and convincing to the interviewer?**
(Strategies may relate to how they behave during the interview, their line of reasoning and thinking, what they choose to say, etc.)

4) In your opinion, how is **the amount of details provided in an alibi** related to the **truthfulness of the alibi**?

- ○ The **more details** provided in the alibi, the **more likely** the alibi is truthful.
- ○ The **more details** provided in the alibi, the **less likely** the alibi is truthful.
- ○ The **amount of details** provided in the alibi is **not related** to its **truthfulness**.

On the basis of the answer you have just chosen, why do you think that this is the case? Please explain your answer.

5) In your opinion, to what extent do **truthful alibis** contain **incorrect details** (i.e., incorrect information the suspect provides unintentionally about the critical time)?

	1 Truthful alibis contain **no incorrect details**	2	3	4	5	6	7 Truthful alibis contain **only incorrect details**
	○	○	○	○	○	○	○

(This question was presented to participants who chose response option 2 in the previous question, or higher) In your opinion, why might truthful alibis contain incorrect details?

6) At what point in the course of the investigation do you think the interviewer begins to form an opinion regarding the guilt or innocence of the suspect?

- ○ Usually ***prior*** to hearing the suspect's alibi for the first time.
- ○ Usually ***while*** the suspect is providing their alibi for the first time.
- ○ Usually ***after interviewing*** the suspect ***several times***.
- ○ Usually ***after there is evidence*** to corroborate or refute the suspect's alibi (regardless of number of times s/he has been interviewed).
- ○ The interviewer **never** forms a belief regarding the suspect's involvement in the crime.
- ○ Other:

7) If, at the **beginning of the interview**, the interviewer believes that the **suspect** is **guilty**, to what extent might this belief affect what this **interviewer** says and how s/he behaves during this interview?

	1	2	3	4	5	6	7
	Does not at all affect the interviewer's words and behaviour						**Significantly affects** the interviewer's words and behaviour
	○	○	○	○	○	○	○

Please explain your answer.

8) If the suspect gets the impression that the interviewer thinks that s/he is **guilty**, how likely do you think it is that:

	1 Very unlikely	2	3	4	5	6	7 Very likely
The suspect will provide more details in their alibi	○		○	(	○		○
The suspect will provide details in their alibi even if s/he is not certain about their accuracy	○		○	(	○		○
The suspect will confess to committing the crime (regardless of whether s/he has committed the crime or not)	○		○	(	○		○

Please complete the following details:

○ My age is:

○ I prefer not to answer

○ My gender is:

○ I prefer not to answer

My country of residence:

The main language I use every day:

Please feel free to add any further thoughts or comments regarding the topic of alibis, or the questions we have just asked you in this questionnaire.

Thank you for completing this questionnaire!

Debriefing Sheet

The purpose of this questionnaire was to understand how people from the general public perceive the difference between truthful and deceptive alibis.

Research thus far has shown that truth-telling suspects tend to provide more information in their alibis as opposed to lie-telling suspects, and that the information provided by the former

is more accurate than that provided by the latter.

We hope that by using responses of respondents such as yourself we will be able to develop interviewing techniques that utilize more realistically the verbal strategies used during interviews, and assist with improving real life interviews conducted with suspects.

Finally, we should inform you that, as part of this research, we have also been asking police officers to complete the questionnaire (the police officers have also been answering additional questions regarding their personal experience with suspects interviewing). We could not inform you before you completed the questionnaire that we were also collecting data from this group of respondents because we had to make sure that nothing would bias your responses to the questionnaire and/or lead you to make incorrect inferences about the aims of the study.

If you have any further concerns or questions please do not hesitate to get in touch with either myself, or my supervisor. Our contact details are as follows:

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If you have any concerns about the way this study was conducted please contact the Interim Head of Department of Psychology:

Dr James Ost
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Tel: 023 9284 6311
Email: james.ost@port.ac.uk

and/or

Chair of the Science Faculty Ethics Committee at:

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James Watson Building
2 King Richard 1st Road
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PO12FR

Appendix I: Supplemental Materials

Table I.1

Chapter 2, Experiment 1: Participants' Self-Reported Strategies Used to Appear Truthful and Convincing During Alibi Provision

	Truth Tellers				**Liars**			
	Pre-Alibi Instructions							
Strategies	Accuracy and Informativeness	Accuracy	Informativeness	Control	Accuracy and Informativeness	Accuracy	Informativeness	Control
Be informative	19 (79%)	15 (62%)	16 (67%)	14 (58%)	9 (38%)	7 (29%)	9 (38%)	10 (42%)
Be accurate; avoid guessing and/or making-up details	1 (4%)	7 (29%)	7 (29%)	0 (0%)	1 (4%)	1 (4%)	1 (4%)	1 (4%)
Not to be too specific/too informative	0 (0%)	1 (4%)	1 (4%)	0 (0%)	2 (8%)	4 (17%)	2 (8%)	2 (8%)

Note: Numbers indicate frequency of reporting each strategy by type of veracity and pre-alibi instructions. Parenthesis include percentage of participants per each instructions and veracity condition who reported each strategy. Each "suspect" could report a strategy more than once and from more than one category.

Chapter 3, Experiment 2: Quantity of Incorrect Details Provided

The number of incorrect details provided for the entire alibis as well as evidence details was calculated in the same way as were the quantity of correct details for each detail type. We ran two one-way ANOVAs with pre-alibi instructions as the independent variable and the number of incorrect details provided by participants as the dependent variable separately for the entire alibis and evidence details. The number of incorrect details provided did not differ significantly between the pre-alibi instructions conditions for the entire alibis, $F(2, 75) = 0.11$, $p = .899$, $f = 0.05$, nor for evidence details, $F(2, 75) = 0.23$, $p = .792$, $f = 0.08$.

Chapter 3, Experiment 2: Additional Reports from Post-Alibi Questionnaire

The majority of participants (85.9%) described their alibi as almost or completely truthful (i.e., marked 90 or higher on the response scale; $M = 94.64$, $SD = 8.75$, range: 50-100). A one-way ANOVA with pre-alibi instructions as independent variable showed a significant difference between pre-alibi instruction conditions in participants' rating of the truthfulness of their alibi, $F(2, 75) = 3.28$, $p = .043$, $f = 0.30$. However, a Tukey post-hoc test revealed that all comparisons were not statistically significant (comparison of task [$M = 91.15$, $SD = 13.16$] and control [$M = 96.46$, $SD = 4.83$] instructions conditions: $p = .069$, $d = 0.54$, 95% CI [-0.02, 1.09] ; comparison of enhanced [$M = 96.31$, $SD = 4.51$] and control instructions conditions: $p = .998$, $d = 0.03$, 95% CI [-0.51, 0.58]; and, comparison of task and enhanced instructions conditions: $p = .080$, $d = 0.52$, 95% CI [-0.03, 1.08]).

We additionally examined the mode of participants' responses to the question "*Before providing the alibi, the experimenter gave you instructions regarding the alibi provision. From those instructions, what type of information did you understand that you were asked to report about?*". In the control condition, most participants (50.0%)

indicated that they understood that they were asked to report "*only about the tasks I had completed (actions I completed, objects I used, places I visited during tasks completion)*". In both the task instructions condition and the enhanced instructions conditions, most participants (76.9% and 88.5%, respectively) indicated that they understood that they were asked to report "*about both the tasks I completed and the evidence that could support it*".

We coded participants freely-reported answers to the question "*What details of your alibi can be checked?*". Since participants commonly reported that the details of their alibis that could be checked were the fact they completed the tasks, the locations they had occupied while doing so, and the times of when they were occupying different locations during task completion, we categorised participants' reports according to the source of each of these three details. Three main categories emerged. Firstly, 60.3% of participants indicated that we could check objects related to the tasks they had completed; these included the tasks inside the tasks package, as seeing that those were completed could support that participants indeed were occupied with completing the tasks. Also, the browsing history on the laptop used for the "finding information" task was mentioned by participants as a detail that could account for the time they had occupied the specific task room. Secondly, 73.1% of participants noted that we could approach the people they had asked for directions, noting that we could turn to them to verify when and where the participants had talked with them. Lastly, 80.8% of participants reported that we could check the slips that they were asked to sign and/or time stamp, which could account for when they had visited certain locations in the building while completing the tasks. Table I.2 presents the frequencies to which each category was mentioned in each pre-alibi instructions condition. We also coded participants' reports on other details that could prove their alibis, such as people other than those that participants were asked to communicate with or CCTV

cameras. We do not report here the frequency to which participants reported these details because we did not control for participants' attention to them.

Table I.2
Categories of Details Reported by Participants as Those That Could Be Checked by The Interviewer

	Alibi Instructions		
What details of your alibi can be checked?	Enhanced	Task	Control
Tasks completed	16 (61.5%)	15 (57.7%)	16 (61.5%)
Person evidence	20 (76.9%)	21 (80.8%)	16 (61.5%)
Object evidence	21 (80.8%)	21 (80.8%)	21 (80.8%)

Note: Numbers indicate the frequency of reporting each category by type of pre-alibi instructions conditions. Parenthesis include percentage of participants per each pre-alibi instructions condition who reported each category. Each participant could report a category more than once and from more than one type.

The strategies participants freely reported to have used to provide their most truthful and convincing alibi were coded in a data-driven manner (i.e., the categories of the strategies were derived from participants' reports and not pre-determined). These strategies are presented in Table I.3.

Table I.3

Participants' Self-Reported Strategies Used to Provide a Convincing Alibi

Describe the strategy or strategies you used in order to appear as truthful and convincing as possible while you were providing your alibi regarding the disappearance of the wallet	**Alibi Instructions**		
	Enhanced	Task	Control
Provide as many details as possible	17 (65.4%)	20 (76.9%)	17 (65.4%)
Be accurate	5 (19.2%)	4 (15.4%)	1 (3.8%)
Not to provide too many details	1 (3.8%)	0 (0%)	0 (0%)
Provide information in chronological order	7 (26.9%)	8 (30.8%)	6 (23.1%)
Be honest/truthful	10 (38.5%)	6 (23.1%)	7 (26.9%)
Provide details about person evidence	2 (7.7%)	7 (26.9%)	6 (23.1%)
Provide details about object evidence	3 (11.5%)	5 (19.2%)	1 (3.8%)
Provide details that can be checked about the tasks or other people (i.e., not person evidence)	5 (19.2%)	2 (7.7%)	7 (26.9%)

Note: Numbers indicate the frequency of reporting each strategy by type of pre-alibi instructions conditions. Parenthesis include percentage of participants per each pre-alibi instructions condition who reported each strategy. Each participant could report a strategy more than once and from more than one category.